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No. 522

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The “Tone Effect” of News on Investor Beliefs: An Experimental Approach¹

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Abstract

We investigate the effect of the tone of news on investor stock price expectations and beliefs. In an experimental study we ask subjects to estimate a future stock price for twelve real listed companies. As additional information we provide them with historical stock prices and extracts from real newspaper articles. We propose a way to manipulate the tone of news extracts without distorting its content. Subjects in different treatment groups read news items that are written either in positive or negative tone for each stock. We find that subjects tend to predict a significantly higher (lower) return for stocks after reading positive (negative) tone news. The effect is especially pronounced for stocks with poor past performance. Subjects are more likely to be optimistic (pessimistic) about the economy and to buy (sell) stocks after reading positive (negative) than negative (positive) tone news. Our results show that the news media might affect not only how investors perceive information, but also what they do in response to it.

Keywords: Tone, News, Framing Effect, Price Expectations, Investor Sentiment, Investment Decisions, Experiment.

JEL: D83, G02, G11

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I. Introduction

There is nothing special in the fact that different information produces different responses. What is interesting to investigate is whether there is a way to produce different responses with the same piece of information. Kahneman and Tversky (1984, 1986) show that different formulations of the same risky choice, which do not distort or suppress information, produce opposite responses among subjects. They tend to choose a risk-averse option when the choice is formulated in terms of gains and a risk-seeking option when the choice is formulated in terms of losses (Barberis and Thaler 2003). Kahneman and Tversky (1984) define this phenomenon as a framing effect and present it as a violation of the invariance principle, one of the underlying principles of rational choice theory. The authors argue that a framing effect often occurs accidentally without people being aware of its impact on the ultimate decision, implying that it can be used deliberately to manipulate the relative attractiveness of an option.

In this paper we investigate the effect of the tone of news on individual investor stock price expectations and beliefs. We base our conclusions on the assumption that the tone of news might alter investor sentiment. Shleifer and Summers (1990) argue against a widely accepted Fama's (1965) Efficient Market Hypothesis by saying that not all changes in demand for equity appear to be rational. Some changes seem to be a response to changes in expectations or sentiment that are not justified by fundamentals, but driven by pseudo-signals that some investors believe convey information about future returns. Such pseudo-signals as the advice of brokers or financial gurus would not convey such information in a fully rational model. Changes in investor sentiment might lead to aggregate demand shifts since the judgment biases that afflict investors in processing information tend to be the same. This observation questions the underlying assumption of the rational choice theory of heterogeneous expectations of "noise traders" or irrational traders that are assumed to cancel each other out.

The tone of news might be one of those pseudo-signals that shape investor sentiment and account for aggregate demand shifts (Shleifer and Summers 1990). The news media are a major source of information for the general public (McCombs and Shaw 1972). Goidel and Langley (1995) suggest that

individuals know very little about real economic conditions and rely heavily on economic forecasts available in the mass media. Despite a great variety of news sources, the news media have become a powerful tool in influencing people's opinion (Shiller 2005, p. 105). In particular, the tone, in which news is written, is a critical factor in shaping public opinion, and thus, its effect on beliefs is an important subject to investigate (Goidel and Langley 1995). Readers may pick up clues regarding the general direction of the economy from the news media without picking up any "hard" economic information. As a result, evaluation of the economy might be "impression-driven" rather than "data-driven". Shiller (2005, p. 88) notes that the media seem to excessively use superlatives and to stress that another record is set by financial markets. As a result, the confusion is created among people as it becomes hard for them to recognize truly important changes in the economy. Together with a great variety of indicators, people are encouraged to avoid individual assessment of quantitative data and to rely heavily on the interpretations by a celebrity source. Mullainathan and Shleifer (2005) suggest that readers hold biased beliefs and that they prefer to hear news that is consistent with their beliefs. As a result, the news media can slant the presentation of news to cater to the preferences of their audience. Authors find that a competition among news media sources does not reduce and might even exaggerate media bias.

Research in finance has been mainly focused on the textual analysis of the content of news and its effect on financial markets (Antweiler and Frank 2004; Tetlock 2007; García 2013). However, to the best of our knowledge, there has been no study on the effect of the tone of economic and financial news on investor stock price expectations and beliefs. In this paper we attempt to fill this gap by designing an experiment that measures to what extent the tone of economic and financial news influences investor stock price expectations and beliefs. A primary advantage of an experimental over an empirical study is the ability of the former to isolate the tone from the content and to test for the tone effect directly. It is impossible to test for the tone effect on financial markets while keeping the content unchanged in empirical studies. Furthermore, empirical studies that show the effect of the negative content of news on financial returns have been often criticized for their inability to determine a causal relation. Empirical data contain plenty of unexplainable noise and there is a risk of spurious correlation. Lastly, empirical studies

interpret the observed negative relation between the news media pessimism and market returns in terms of investor sentiment as an underlying mechanism (Tetlock 2007; García 2013), but are not able to measure investment sentiment directly. An experimental study provides more control and allows us to overcome these potential issues, to isolate the tone effect, to minimize noise, and to establish the underlying mechanism that drives the results.

We propose a method to manipulate the tone of news extracts while keeping the content unchanged by applying modifier words that emphasize or attenuate one piece of information over another. During the experiment subjects were asked to estimate the future stock price of twelve real companies based on the historical prices of each stock for 50 months and an extract from a real newspaper article published in the past. The tone of news was modified to be either positive or negative. Subjects read six positive and six negative tone news. Subjects were randomly assigned into two treatment groups such that subjects in different treatments read opposite tone news items for each stock. Stock prices were classified into increasing, decreasing, and no trend performance groups in order to account for different market conditions. Apart from predicting the next period stock price, subjects were asked to provide their estimates of upper and lower bounds of the next period stock price, to assess confidence in their predictions, to evaluate the future potential of each stock, to describe their sentiment about prevailing economic conditions, to evaluate the riskiness of the stock markets, and to make an investment decision.

To our knowledge this is the first paper that tests for the news media framing effect on financial markets. Our results show that subjects on average seem to expect a significantly higher (lower) future return after reading positive (negative) tone news. The effect appears to be driven mainly by stocks with the poor past performance. Subjects, who tend to expect a higher (lower) next period stock return, also tend to describe their sentiment as more optimistic (pessimistic). Subjects are more likely to choose to buy (sell) additional shares after reading positive (negative) than negative (positive) tone news. Our findings indicate that the impression that private investors get about the economy from the news media might contribute to the formation of their stock price expectations. As a result, private investors might be easily misled by the news media and might make irrational decisions causing anomalies on the stock

market. Additionally, our results suggest that the tone of news might influence not only how investors *perceive* information, but also what they *do* in response to it.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and develops our hypotheses. Section 3 describes the experimental design. Section 4 discusses our findings, and Section 5 concludes the paper.

II. Related Literature and Hypotheses Development

A number of influential papers in the finance literature investigate the effect of the content of news on stock market returns and volatility. Tetlock (2007) analyzes the effect of the content of the daily *WSJ* column “Abreast of the Market” on the performance of stock markets on a daily basis. The results show a significant negative relation between the frequency of negative keywords in the press and the daily returns on the DJIA index. García (2013) analyzes the effect of the news content on daily market returns of the DJIA index by taking a fraction of positive and negative words in the historical *NYT* columns “Financial Markets” and “Topics in Wall Street.” He finds evidence of a negative relation between media pessimism and daily returns of the DJIA index.

Engelberg and Parsons (2011) document the causal impact of the news media in financial markets. Authors propose an innovative approach to overcome potential problems of reverse causality. In their paper, they investigate the effect of the local media coverage of earnings announcements of S&P 500 index firms on the trading volume in each trading region. Authors identify 19 mutually exclusive trading regions, which correspond to large U.S. cities. In each trading region, a local media source is identified. The results show that depending on whether the local media cover earnings announcement of a particular firm, the trading volume in the corresponding trading region increases substantially from 8% to 50%.

Another paper by Dougal et al. (2012) investigate fixed effects of journalists of “Abreast of the Market” column in *WSJ* on DJIA returns. Authors argue that journalists have their own style, persuasion, views and biases that are reflected in the columns they write. A general ‘bullishness’ or ‘bearishness’ of a specific journalist might amplify or temper the prevailing investor sentiment. The results show that

journalist fixed effects are significant predictors of future DJIA returns. The inclusion of the name of a specific journalist to their model increases the predictive power of the regression by 30-40% relative to other control variables.

These findings lead us to our first hypothesis:

Hypothesis 1. Subjects tend to expect a higher (lower) return after reading positive (negative) tone news.

García (2013) reports that the results of the predictive activity of media pessimism on DJIA returns are mainly driven by the effect of media pessimism during recessions implying that the news media might have an asymmetric effect on financial markets in different economic conditions. The asymmetric predictive activity of news on stock returns during recessions might find grounds in the phenomenon that losses loom larger than gains. In Prospect theory, Kahneman and Tversky (1986) show that losses result in a more negative response than gains of a similar magnitude result in a positive response. This phenomenon is known as loss aversion. Baumeister, Bratslavsky, Finkenauer and Vohs (2001) find evidence in the psychology literature that bad events have a greater power on the perception than good events. Thus, people might be more sensitive towards news when the economy is in recession. Dougal et al. (2012) find that the fixed effects of a specific journalist are strongest when journalists write about significant market moves. Given these findings we expect:

Hypothesis 2. The effect of positive and negative tone news on subjects' price expectations is stronger for decreasing than for increasing stocks.

Antweiler and Frank (2004) analyze the predictive activity of the Internet stock message boards posted on the *Yahoo! Finance* and *Raging Bull* websites on the short-term return and volatility of 45 U.S. listed company stocks. They find a weak positive relation between negative messages and volatility. On the other hand, Kim and Kim (2014) base their investor sentiment indices on the direct sentiment measures revealed by investors on *Yahoo! Finance* stock message boards. From 2004 *Yahoo! Finance* stock message boards have provided an option for retain investors to reveal their sentiment among five categories: “Strong buy”, “Buy”, “Hold”, “Sell”, and “Strong Sell”. On contrary to the previous studies,

Kim and Kim (2014) do not find a statistically significant predictive power of investor sentiment for stock returns and stock volatility. Based on these findings we suggest the following hypothesis:

Hypothesis 3. Subjects tend to expect higher (lower) volatility after reading negative (positive) tone news.

Investor sentiment is one of the factors that helps to explain many anomalies on the financial markets (Shleifer and Summers 1990). Many trading strategies are based on pseudo-signals, noise and popular models that are correlated and lead to aggregate demand shifts. The tone of news media might be considered as one of these pseudo-signals. The news media is able to manipulate the way information is perceived by readers by pursuing different formulations. Price, Tewksbury and Powers (1997) argue that the formulation of news influences the way readers perceive new information and feel about it. Such a framing effect can also ensure that certain ideas are perceived as more important than others and can impact the final attitude of the reader (Nelson, Clawson and Oxley 1997).

Schuck and de Vreese (2006) investigate how risk and opportunity news frames impact public support for the enlargement of the European Union (EU). In the former news frame, subjects are presented with the EU enlargement as a risk for Europe, whereas in the latter news frame, the EU enlargement is portrayed as an opportunity. Participants in the opportunity news frame treatment group seem to exhibit a greater support for the enlargement than participants in the risk news frame treatment. In another study, Schuck and de Vreese (2008) investigate the effect of positive and negative framing in news coverage about the Dutch EU Constitutional referendum on risk-induced electoral mobilization. Authors conclude that EU-sceptic respondents that were given to read a positive frame story express a higher level of intention to participate in the elections compared to a negative frame condition. Valkenburg, Semetko and de Vreese (1999) examine the effect of news frames on readers' thoughts by presenting readers with two news stories, one about crime and another about the introduction of the euro, that were framed in terms of conflict, human interest, responsibility, or economic consequences. The results show that subjects tend to elicit thoughts about the issue discussed in the news story that mirror the frame of the news story they read. Given these findings, we expect the following relation between the tone of news, investor sentiment and beliefs:

Hypothesis 4. Subjects tend to express positive (negative) sentiment about economic prospects after reading positive (negative) tone news.

Hypothesis 5. Subjects tend to feel more optimistic (pessimistic) about future potential of a stock after reading positive (negative) tone news.

Hypothesis 6. Subjects tend to assess stock markets as more (less) risky after reading negative (positive) tone news.

The tone of news might not only affect investor sentiment, but also investor decisions. As Shleifer and Summers (1990) note, market professionals spend considerable resources tracking price trends, volume, investor sentiment indices and other gauges of demand for equity in order to derive profitable trading strategies. One of the most popular strategy is to extrapolate or chase the trend, which implies buying stocks when prices rise and selling stocks when prices fall. This strategy obtained the name of momentum (Barberis and Thaler 2003). If the tone of news is able to manipulate investor sentiment and cause demand shifts, that happens only as a result of buying or selling activity of “noise traders,” which is picked up by arbitrageurs in the short-term. After all, if investor sentiment did not influence investor decisions, there would be no reason to study it. Thus, we expect:

Hypothesis 7. Subjects are more likely to buy (sell) stocks after reading positive (negative) than negative (positive) tone news.

III. Experimental Design

A. Sample

Our sample consists of 80 Master and Bachelor students from the Faculty of Economics and Business Administration at the *VU University Amsterdam*. We placed an announcement on a student portal *Blackboard*, in which we invited students to participate in an experimental study on *Price Expectations*. We recruited students from the following international Master and Bachelor programs: *MSc Finance*, *MSc Financial Management*, *MSc Economics*, *MSc Econometrics*, *MSc Development Economics*, *BSc International Business Administration*, *BSc Economics*, and *BSc Business Administration*. All programs

are taught in English language except for *BSc Economics* and *BSc Business Administration* that are taught in Dutch language, but with English study materials. Table 1 reports a number of students from each program that participated in the experiment. The experiment was held in two sessions: the first took place on May 7, 2014, and the second was on June 4, 2014. We were able to recruit 38 and 42 students to participate in each session, respectively.

<Please Insert Table 1 about Here>

All students were equally and randomly assigned into two treatment groups. There is no difference in age or gender between treatment groups. The average age of the participants is 23 years. By the end of the experiment subjects were asked questions about familiarity with financial concepts, experience in investing, and news following. Most of the students replied to be familiar with financial concepts, to have experience in investing and to follow economic news.

A primary reason to use students as subjects in experimental studies is the fact that they are available and generally willing to participate. However, the major concern of doing so is whether the results can be extrapolated to professionals. Experimentalists usually refute this argument by pointing out that it is not a criticism of the experimental method *per se*, but rather a suggestion to perform a field experiment on the professionals (Plott 1982; Kinder and Palfrey 1993). Many studies show little differences in performance between students and professionals (Höst, M., B. Regnell, and C. Wohlin 2000; Burns 1985; DeJong, D., R. Forsythe, and W. Uecker 1988; Dyer, D., J. Kagel, and D. Levin 1989). In contrast to the previous research, Potters and Winden (2000) find a significant difference in behavior of student and professional subjects in signaling game experiments used to study lobbying. However, authors believe that using subjects as a surrogate for professionals in the experiments is still justified. Firstly, the size of differential effects were found to be generally small. Secondly, for most of the professional subjects there were no differences with the students. Thirdly, it is possible to adjust data obtained with student subjects to systematic and robust differences. And lastly, the direction of the effect generally remains the same.

B. Procedure

The experiment took the form of a pen-and-paper questionnaire and was conducted in one of the lecture rooms at the *VU University Amsterdam*. A cover page of the questionnaire contained an assigned treatment number, an assigned subject number, and instructions (Appendix A). During the experiment subjects observed twelve graphs of standardized historical stock prices of real listed companies for fifty arbitrary months. Additionally, subjects were asked to read an extract from a real newspaper article that was published on the last reported month of each stock. Both treatment groups observed the same stocks and read news with the same content, but opposite tone. The tone of the news extracts was modified to be either positive or negative. Table 2 summarizes the tone of news items for each stock that subjects were asked to read in both treatments. Subjects were asked to anonymously answer a number of questions about each stock. By the end of the experiment subjects were rewarded for their participation on an incentive-compatible basis. On average, each subject received around 22 euro for the participation. The experiment lasted approximately one hour.

<Please Insert Table 2 about Here>

In the following we provide a more detailed description of the stocks used in the experiment, the tone manipulation technique, the questionnaire, and the reward scheme.

i. Stocks

We selected twelve U.S. company stocks that were listed on the S&P 500 index and that complied with our pre-specified performance requirements. We downloaded stock price data from *Datastream* database for each company for 52 months for various time intervals between 1990 and 2010. The actual names of the companies and their corresponding time periods are reported in Table 3. We standardized all stock prices to 100 on the trading period 0 such that all prices were on the same order of magnitude and replaced the real name of the company stock with a letter. Each subject observed a graph of standardized historical prices for each stock for 50 months (Appendix B). During the experiment, subjects were not aware about the actual name of stocks and its corresponding time intervals. Such a design ensured that

subjects did not possess additional information about the performance of stocks apart from what was provided. The current standardized price is the ultimate reported price on the graph for each stock. Table 3 also reports the actual next period standardized price, which subjects were asked to predict.

<Please Insert Table 3 about Here>

We selected a specific time interval for each stock such that each stock belonged to one of our predetermined performance groups. We classified a stock to an “increasing” (“decreasing”) performance group if a stock exhibited a positive (negative) and statistically significant time trend coefficient for 50 reported months and its return was positive (negative) for more than 60% of the time during the last 25 reported months of the selected time interval. Lastly, we classified a stock to a “no trend” performance group if it did not exhibit a statistically significant time trend coefficient and experienced a positive return between 40% and 60% of the time during the last 25 reported trading periods. Table 3 reports time trend coefficients and a percentage of time each stock experienced gains in the last 25 reported months. Stocks C, F, H, and K were classified as “increasing stocks”; stocks E, G, I, and J were classified as “decreasing stocks”; and stocks A, B, D, and L were classified as “no trend stocks”. Furthermore, we ensured that volatility of returns was similar across stocks. The last column of Table 3 reports a standard deviation of each stock returns for the selected time interval.

Subjects observed our stocks in an alphabetical order. In order to prevent some stocks from always appearing first and some from always appearing last, we randomized the order of stocks by starting with a different stock for each subject. Stocks that followed continued in an alphabetical order. For example, subject 1 observed stocks in order A, B, C, D,..., L, while subject 2 observed stocks in order D, E, ..., A, B, C, and so on. Table 1 reports the number of subjects per treatment group that observed stocks in a particular order.

ii. News Extracts

In order to test for the tone effect of the news media on subjects’ expectations, we designed a procedure to manipulate the tone of news without distorting or surpassing the content. We manipulated the tone in

news extracts by emphasizing one type of economic information over another by using emotionally loaded modifier words. Modifier words are adjectives and adverbs that add a description to the content in the text (Quirk, Greenbaum, Leech, and Svartvik 1985). Modifiers add no contribution to the content, but rather serve to enhance and to give an additional emotional meaning to the information it describes. Modifier words can be omitted from the text without any loss of generality. Quirk et. al. (1985) distinguishes between emphasizees, amplifiers, and downtoners. Emphasizer adjectives and adverbs have a general heightening effect and add force to the content they describe. Amplifier adjectives and adverbs scale upwards from an assumed norm and denote a high or extreme degree. Downtoner adjectives and adverbs have a lowering effect, scaling downwards from an assumed norm. We created our own list of emphasizee, amplifier, and downtoner words by following the definition and examples in Quirk et al. (1985). Table 4 presents a list of modifier words that we suggest to use in order to alter the tone.

<Please Insert Table 4 about Here>

We used emphasizee and amplifier words in order to stress positive (negative) economic facts in positive (negative) tone news extracts. We used downtoner words in order to attenuate negative (positive) economic facts in the positive (negative) tone news extracts. For example, we used one of the emphasizees or amplifiers in sentences like “stock prices *emphasizer or amplifier* increased (decreased) by XX per cent” or “stock prices increased (decreased) *emphasizer or amplifier* by XX per cent.” On the other hand, we used one of the downtoner words in sentences like “stock prices *downtoner* decreased (increased) by XX per cent” or “stock prices decreased (increased) *downtoner* by XX per cent” (Appendix C).

We based our news extracts on the real newspaper articles published at some point in time in the past downloaded from the *LexisNexis* database, which is a database of world leading news sources and company information. News for each stock are extracts from actual newspaper articles that were published on the last reported month of the corresponding stock. We selected our news extracts from the *New York Times (NYT)* or the *Financial Time (FT)* as these are two leading, prominent and renowned daily financial newspapers, which are published in English language in the U.S. and the U.K.,

respectively. As was noted in introduction, people seem to rely heavily on the interpretations by a celebrity source (Shiller 2005, p. 88). We suggest that the *NYT* and *FT* have gained a good reputation, and thus, are suitable examples of a celebrity source. García (2013) analyzes the content of the two *NYT* historical columns and argues that this source is an important channel of financial news² (Appendix D).

We suggest to control for complexity of news extracts. While we cannot account for all possible dimensions of complexity, we assume in this paper that complexity is related to a number of distinct topics discussed in the news extract. We classified all our news extracts to either simple or complex news. Simple (complex) news category includes news that discusses two or three (seven to eight) distinct topics. We assume that the difference in complexity is sufficient between news extracts that cover two to three and seven to eight distinct topics, respectively. For example, we identified three distinct topics discussed in the simple news extract for stock A, which were (i) European equity, (ii) Pharmaceutical companies, and (iii) German Ibo business climate. On the other hand, complex news for stock B discussed eight topics: (i) U.S. GDP, (ii) U.S. export, (iii) U.S. personal spending/domestic consumption, (iv) dollar, (v) global equity, (vi) European stocks, (vii) German Ifo Business climate, and (viii) oil prices (Appendix C and D). News extracts for stocks A, C, D, H, I, and J were classified as simple and news extracts for stocks B, E, F, G, K, and L were classified as complex news. Sometimes, an original newspaper article, on which we based our news extract, did not discuss enough distinct topics. In this case, we searched for an additional article, which was published on the same day and covered the same topic, and combined both articles in one single news extract in order to ensure that a certain number of distinct topics was discussed. News extracts for stocks C, F, G, and H were based on two newspaper articles, whereas other news extracts were based on a single newspaper article (Appendix C and D).

We removed all time hints from the headline and the body of news extracts so that subjects could not guess the exact time period, when each news was published. We did it for the same reason, for which we did not provide subjects with additional information about each stock such as its corresponding

² We acknowledge that the *WSJ* is a reasonable alternative to the *NYT* and the *FT*. It has been used in studies by Tetlock (2007) and Douglas et al. (2012). However, *LexisNexis* only provides an abstract of *WSJ* articles rather than the entire article. Therefore, we decided to use only the *NYT* and the *FT* as news sources.

company or the time interval. We strived to create an uncertain environment and to ensure that subjects made their predictions about the future, rather than guessed what happened in the past. Being able to guess the time period when news extracts were published would have biased subjects' responses as they would have used their knowledge about historical stock prices in their predictions. As a result, we would not have been able to ensure that all subjects shared the same informational set, and therefore, would not have been able to make reliable conclusions about our findings.

iii. Questionnaire

We asked subjects to anonymously fill in a questionnaire after observing historical prices of each stock and reading a corresponding news extract (Appendix A). Our analysis of the tone effect is mainly based on the question regarding subjects' expectations of the stock price in the following month. We estimate the expected return for each stock based on the current and predicted prices in the following manner:

$$r_{ij}^{EXP} = \ln(P_{ij}^{PRED}) - \ln(P_i^{CURR}), \quad (1)$$

where r_{ij}^{EXP} is the estimated expected return of stock i by subject j , P_{ij}^{PRED} is a predicted price for stock i by subject j , and P_i^{CURR} is the standardized current price of stock i .

We also asked subjects to provide their upper and lower bound price estimates in the next trading period for each stock. We follow the approach by Ben-David, Graham, and Harvey (2013) in order to estimate expected volatility for each stock at a 90% confidence level:

$$VOLA_{ij}^{EXP} = (\ln(P_{ij}^{UP} / P_i^{CURR}) - \ln(P_{ij}^{LOW} / P_i^{CURR})) / 2.65, \quad (2)$$

where $VOLA_{ij}^{EXP}$ is estimated expected volatility of stock i by subject j , P_{ij}^{UP} is the upper bound of the price of stock i in the next trading period estimated by subject j , P_{ij}^{LOW} is the lower bound of the price of stock i in the next trading period provided by subject j , and P_i^{CURR} is the given standardized current price for stock i .

Additionally, we asked subjects to rate on a seven-point scale their confidence about their pricing estimates, their sentiment about future potential and economic prospects, and their perceived riskiness of the stock market in general where 1 is set to be low/pessimistic/low perceived safety and 7 is set to be high/optimistic/high perceived safety, respectively as in Hoffmann, Post, and Pennings (2013). We also

asked subjects to imagine that they currently hold shares of each stock. We proposed three alternative investment decisions for them to choose from: to buy additional shares, to sell existing shares, or to hold the shares they hypothetically possess and to continue to be invested in the stock markets.

iv. Rewards

We rewarded our subjects for their participation at the end of the experiment. Our reward scheme is based on two parts: a fixed show-up fee of 10 euro, and a variable fee depending on how closely subjects' predicted price matched the realized standardized price for each stock. We followed the payment scheme by Haruvy, Lahav, and Noussair (2007) and awarded 2 euro to subjects for each predicted price that fell within a 1% range of the realized standardized price for each stock, 1 euro and 50 cent for achieving a 5% range, and 1 euro for achieving a 10% range. There was no reward for the predicted price that fell outside of those pre-specified ranges. In total, 1,752 euro was paid out as rewarding fees. On average, each subject received around 22 euro.

IV. Results and Discussion

In this section we discuss the results of the experiment for the tone effect on the expected return, expected volatility, subjects' beliefs, and subjects' investment actions.

A. Tone and Expected Return

In order to test for the tone effect of the news media on subjects' price expectations, we estimate the expected return for each stock by taking a log difference of the predicted price and the current price of each stock as in (1). We aggregate the expected return estimates for stocks that are accompanied by positive tone news and by negative tone news from both treatment groups and visualize the distribution of data on a histogram in Figure 1. Positive tone includes data on expected returns for stocks A, C, D, G, I, and K for Treatment 1, and for stocks B, E, F, H, J, and L for Treatment 2 as these stocks are accompanied by the positive tone news extracts. Similarly, negative tone includes data on expected returns for stocks B, E, F, H, J, and L for Treatment 1 and A, C, D, G, I, and K for Treatment 2 as these stocks are accompanied by the negative tone news extracts. The histogram in Figure 1 is based on 480

expected return estimates for each tone condition. Thus, for the positive tone condition we obtain 40 expected return estimates for each stock for six positive tone news stocks from Treatment 1 and for six positive tone news stocks from Treatment 2 ($40 \times 6 + 40 \times 6$). Similarly, for the negative tone condition we obtain 40 expected return estimates for each stock for six negative tone news stocks from Treatment 1 and for six negative tone news stocks from Treatment 2 ($40 \times 6 + 40 \times 6$).

<Please Insert Figure 1 about Here>

Table 5 reports the descriptive statistics of the expected return and expected volatility estimates for different tone conditions and different stock performance groups. The mean and median expected return for stocks with positive tone news is slightly higher than for stocks with negative tone news. A mean (median) expected return for positive tone news stocks is 0.7% (0.7%) while for negative tone news stocks is -1.2% (0.0%). A standard deviation of expected returns for positive and negative tone news stocks is 5.9% and 6.7%, respectively. The highest and lowest expected return for the positive tone condition is 36.4% and -34.8%, respectively. The highest and lowest expected return for the negative tone condition is 19.4% and -45.3%, respectively. This result suggests that subjects tend to predict higher (lower) prices for stocks that are accompanied by positive (negative) tone news. This result is in line with our expectations in Hypothesis 1 and confirms findings in the previous literature (Antweiler and Frank 2004; Tetlock 2007; Engelberg and Parsons 2011; Dougal et al. 2012; García 2013), but is in contrast to the results by Kim and Kim (2014).

<Please Insert Table 5 about Here>

Tone effect for all data

We now proceed with a more formal test on the results in Figure 1. Table 6, Panel A reports results of a test for equality in mean expected returns for the aggregated data. We find that subjects tend to predict on average a 1.8% higher (lower) return for stocks after reading positive (negative) tone news. We find a positive and statistically significant average expected return for stocks with positive tone news (t -test, $p = 0.007$), and a negative and statistically significant average expected return for stocks with negative tone news (t -test, $p = 0.000$). The difference between average expected returns for stocks with positive and

negative tone news is positive and strongly statistically significant (t -test, $p = 0.000$). This result is robust when we test for the equality in median expected returns. We find a significant positive median expected return for stocks with positive tone news (Wilcoxon signed-rank test³, $p = 0.000$), and a significant negative median expected return for stocks with negative tone news (Wilcoxon signed ranked test, $p = 0.042$). The median expected return for stocks with positive tone news is significantly different from the median expected return for stocks with negative tone, and the difference is positive (Mann-Whitney test⁴, $p = 0.000$).

<Please Insert Table 6 Panel A about Here>

We find similar results when we compare expected returns of all stocks that are accompanied by positive (negative) tone news in Treatment 1 to exactly the same stocks that are accompanied by negative (positive) tone news in Treatment 2. This way we ensure that we compare exactly the same stocks, for which only the tone of news differs. As expected, we find a significantly higher (lower) average and median expected return for stocks that are accompanied by positive (negative) tone news across treatment groups (Table 6, Panel A).

The results support our findings in Figure 1 and our expectations in Hypothesis 1 and suggest that the tone of news extracts alters subjects' stock price expectations. This is the key finding of our paper. Subjects seem to predict a higher (lower) price for stocks that are accompanied by positive (negative) tone news. This finding suggests that the impression private investors get from the news media reports might contribute to the formation of their stock price expectations. As a results, private investors might be easily misled by the news media (Goidel and Langley 1995). As a result, they might make irrational investment decisions and cause anomalies on the stock market. The results are consistent with the findings by Tetlock (2007) and García (2013). It also supports the intuition that the news media influence the way people

³ Wilcoxon signed-rank test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ. It is an alternative to the paired Student's t -test when the samples cannot be assumed to be normally distributed.

⁴ Mann-Whitney test is a non-parametric test of the null hypothesis that two populations are the same against an alternative hypothesis. This test does not require the assumption of normal distribution.

perceive information discussed on news (Shiller 2005; Dougal et al. 2012). However, our results conflict with results by Antweiler and Frank (2004) and Kim and Kim (2014) that do not show a predictive power of investor sentiment for stock returns. The following Result 1 presents our main finding:

Result 1: (Main finding) Subjects tend to expect a significantly higher (lower) stock price return after reading a positive (negative) tone news extract.

Tone effect for different performance groups

We analyze the tone effect for stocks in different performance groups. First, we analyze the results for stocks C, F, H, and K, which are classified as increasing stocks. Table 5 reports expected return estimates for the increasing stocks. There are 160 expected return estimates for the increasing stocks in total. An average (median) expected return for the increasing stocks is 0.5% (0.3%) across both treatments groups and tone conditions. A standard deviation of expected return for the increasing stocks is 5.4%, which is below the actual standard deviation of around 8% for all stocks (Table 3). The lowest and highest expected return estimates for the increasing stocks range from -25.4% to 19.3%, respectively.

Subjects in both tone conditions seem to expect a positive average return for the increasing stocks. We find average expected returns of 1.1% and 0.4% respectively for the aggregated data for positive and negative tone conditions. We find some weak evidence of the tone effect for the increasing stocks. Table 6, Panel A reports a marginally significant difference of -1.3% in average expected returns between stocks with negative and positive tone news in Treatment 1 and 2 (t -test, $p = 0.067$). The results are robust for median expected returns. The positive tone confirms a good performance of the increasing stocks in the past and gives an additional upward boost to the predicted price, while the negative tone conflicts with the past performance and, as a result, its effect diminishes. On average for the pooled data, the negative tone effect accounts for a 0.7% decrease in the expected return for increasing stocks, although this difference is not statistically significant. This intuition is consistent with a so-called

confirmation bias⁵. Consistent with Mullainathan and Shleifer (2005), subjects that read positive tone news for the increasing stocks might find this news more credible than subjects that read negative tone news.

In line with Kahneman and Tversky (1986) and Baumeister et al. (2001), the tone effect of the news media is weak for stocks that performed well in the past suggesting the subjects seem to be less sensitive to tone manipulations in a good state of the economy. Our findings for the increasing stocks partially support our Hypothesis 2 and the results by García (2013). The following result presents our findings for increasing stocks:

Result 2a: For the increasing stocks, subjects tend to predict a positive return in both tone conditions. Subjects expect a marginally higher (lower) return for the increasing stocks after reading positive (negative) tone news.

Now we turn to analyze the tone effect of the decreasing stocks E, G, I, and J. Table 5 reports the descriptive statistics of the decreasing stocks across treatment groups and tone conditions based on the total of 160 estimates. An average (median) expected return for the decreasing stocks is -0.5% (0.0%). A standard deviation of expected returns for the decreasing stocks is 7.1%. The minimum and maximum expected return estimates provided by subjects are -32.9% and 36.4%, respectively.

On average, subjects tend to expect a positive, but insignificant, return of 0.6% after reading positive tone news (t -test, $p = 0.216$) and a negative and significant return of -1.8% after reading negative tone news (t -test, $p = 0.000$) (Table 6, Panel A). The difference in expected returns between positive and negative tone conditions is 2.4% (t -test, $p = 0.000$). We find similar results when we compare an average expected return for stocks that are accompanied by positive (negative) and negative (positive) tone news in Treatments 1 and 2. Our findings are robust when we analyze median expected returns. The results seem to be driven by a significant negative average expected return for the decreasing stocks that are accompanied by negative tone news. As Mullainathan and Shleifer (2005) suggest, subjects might find

⁵ Confirmation bias is defined as a tendency of seeking or interpreting evidence in a way that is partial to existing beliefs, expectations and hypotheses at hand and disregarding evidence that contradict these prior beliefs (Nickerson 1998).

negative tone news that confirms poor past performance of the decreasing stocks more credible, on contrary to positive tone news that conflicts the past performance of the decreasing stock and, as a result, might be perceived as less credible. The effect of negative tone news decreases the expected return of the decreasing stocks by 2.4% on average for the pooled data. On contrary to the results for the increasing stocks, the tone effect is large and statistically significant for the stocks with a poor past performance.

This finding underlines the dynamics of the tone effect in different economic conditions and supports our expectations in Hypothesis 2 of a stronger tone effect for the decreasing than for the increasing stocks. It is in line with the findings by García (2013) and Dougal et al. (2012). Additionally, our findings confirm the intuition from the psychology literature by Baumeister et al. (2001) and Kahneman and Tversky (1986) that losses loom larger. The result 2b summarizes our findings for the decreasing stocks.

Result 2b: For the decreasing stocks, subjects tend to predict a significantly higher (lower) return after reading positive (negative) tone news.

Stocks A, B, D, and L are classified as the no trend stocks. These are stocks that do not exhibit any particular trend in the past and are supposed to be perceived as the most uncertain. Table 5 reports the descriptive statistics of the no trend stocks. An average (median) expected return for the no trend stocks is -1.2% (0.1%) and a standard deviation of expected returns for the no trend stocks is 8.3%. The highest and lowest expected return estimates for the no trend stocks are 16.0% and -45.3%, respectively.

An average expected return for the no trend stocks that are accompanied by positive and negative tone news is 0.3% (t -test, $p = 0.532$) and -2.0% (t -test, $p = 0.001$), respectively. Similar to the decreasing stocks, subjects seem to expect a 2.4% higher (lower) return for the no trend stocks after reading positive (negative) tone news on average for the pooled data (t -test, $p = 0.001$). The findings are similar when we compare average expected returns for positive and negative tone news across treatments and are robust for median expected returns.

The no trend stocks represent uncertain market conditions. We assume that subjects are not able to infer a general direction of the stock prices after observing its past performance. Thus, this group of

stocks allows us to isolate the tone effect from the past performance of the stock, which also impacts subjects' expectations. Our findings show that the tone effect for the no trend stocks is very similar in magnitude to the tone effect of the decreasing stocks. On the other hand, a good past performance of the increasing stocks seem to eliminate the tone effect completely.

It appears that subjects are more sensitive to salient factors such as the tone of news when the performance of financial markets is not clear. This makes an intuitive sense. In an uncertain environment when it is not clear where stock markets are heading, subjects might struggle to make price expectations, and thus, might be encouraged to look for additional hints in the news media (Shiller 2005, p. 88). Our findings for the no trend stocks support our main Result 1 and present additional evidence of the “pure” tone effect. The results are consistent with our expectations in Hypothesis 1 as well as with the findings reported by Tetlock (2007) and García (2013). In the following, we summarize our findings for the no trend stocks:

Result 2c: For the no trend stocks, subjects tend to predict a significantly higher (lower) stock price return after reading positive (negative) tone news.

Tone effect for the individual stocks

We perform the analysis of the tone effect on the expected return for the individual stocks. The results in Table 6, Panel B confirm our previous findings. Subjects seem to be affected by tone manipulations and tend to expect a significantly higher (lower) average return for five stocks (A, B, E, G, and L) after reading positive (negative) than negative (positive) tone news. These are the decreasing (E and G) or no trend (A, B, and L) stocks. The increasing stocks do not seem to exhibit any significant difference in average expected returns across tone conditions. The results for the median expected return confirm our findings. We find a significant difference in median expected returns for stocks A, B, E, H, and I. On contrary to the mean equality test, we find a significant difference in median expected returns between positive and negative tone conditions for stock H, which is the increasing stock.

<Please Insert Table 6 Panel B about Here>

The results for the individual stocks are in line with our main Result 1 and Results 2a, 2b, and 2c. Consistent with Hypothesis 1, subjects seem to expect higher (lower) stock return on average after reading positive (negative) tone news. Similar to Results 2a, 2b, and 2c, the tone effect seems to be most pronounced for the decreasing and no trend stocks, while it is weak for the increasing stocks. This observation supports our expectations in Hypothesis 2. The difference in mean expected returns between positive and negative tone conditions for the no trend stocks A, B, and L is 2.8% (t -test, $p=0.014$), 1.9% (t -test, $p=0.019$), and 4.1% (t -test, $p=0.010$), respectively. Similarly, the difference in mean expected returns between positive and negative tone conditions for the decreasing stocks E and G is 4.5% (t -test, $p=0.001$) and 2.2% (t -test, $p=0.036$) respectively. The only significant difference in median expected returns between positive and negative tone conditions for the increasing stocks is observed for stock H. Subjects tend to expect a 1.3% return after reading positive tone news and only 0.1% after reading negative tone news. The difference is thus 1.1% (Mann-Whitney test, $p=0.009$).

This suggests that subjects are more sensitive to tone manipulations in the states of poor past performance of a stock or in the states when the general trend in the stock prices is not obvious (decreasing and no trend stocks). These results are in line with the findings by García (2013) and Shiller (2005, p. 85) and are consistent with the psychological findings by Baumeister et al. (2001) and Kahneman and Tversky (1986). On the other hand, when subjects observe good past performance of a stock, they seem to pay less attention to the tone of news items when making their predictions about the future price.

This result might have interesting implications. During the experiment subjects observe the performance of a hypothetically own stock, but read news about the economy in general. When their stock performs well, they seem to disregard the signals sent by the news media and make optimistic predictions. On the other hand, when their stock performs badly, subjects seem to be particularly sensitive to what the news media say and to make optimistic (pessimistic) predictions if the news media sends positive (negative) signals about the economy in general. The same holds when subjects are not certain about “bullishness” or “bearishness” of their stock. This leads us to a suggestion that subjects might form

their sentiment based on the performance of their own portfolio, rather than on the performance of stock markets in general. Thus, investors that profit on their portfolios during recessions (eg. contrarian investors, hedge funds) might be more optimistic about the economic outlook than investors that experience heavy losses.

B. Tone Effect and Expected Volatility

In this section we examine the tone effect on subjects' expected volatility of each stock. We estimate expected volatility by following the Ben-David, Graham, and Harvey's (2013) approach as in (2) by using the subjects' upper and lower bound price estimates for each stock. We consider expected volatility as a proxy for subjects' perceived riskiness of a stock.

Figure 2 plots a histogram of the distribution of expected volatility for stocks with positive and negative tone news. Similar to Figure 1, we aggregate data for positive and negative tone from both treatment groups. We pool expected volatility estimates for the positive tone condition for stocks A, C, D, G, I, and K from Treatment 1 and for stocks B, E, F, H, J, and L for Treatment 2. Similarly, we aggregate expected volatility estimates for the negative tone condition for stocks B, E, F, H, J, and L for Treatment 1 and for stocks A, C, D, G, I, and K from Treatment 2. The histogram for positive tone is based on 480 estimates (40 estimates per each stock for six positive tone news stocks from Treatment 1 and for six positive tone news stocks from Treatment 2) and on 477 estimates for negative tone. We miss one expected volatility estimate for stocks A, K, and L for Treatments 1, 2, and 2, respectively. These estimates were not filled in by different subjects due to supposedly their inattentiveness.

<Please Insert Figure 2 about Here>

Data for positive and negative tone expected volatilities seem to be similarly distributed with similar levels of mean and median (Table 5). A mean (median) expected volatility for positive and negative tone conditions is 5.1% (3.5%) and 5.2% (3.3%), respectively. A standard deviation of expected volatility is 5.7% and 5.9% respectively for the positive and negative tone. The expected volatility distribution for both tone conditions is widely spread. The lowest and highest expected volatility

estimates range from 0.0% to 41.5% for the positive tone condition and from 0.0% to 47.3% for the negative tone condition. This suggests that there is no difference between average and median expected volatilities for positive and negative tone conditions.

Table 7, Panel A reports the results for expected volatility for pooled data and for individual treatments. A different number of observations results from missing estimates⁶. We do not find evidence of the tone effect on expected volatility. The estimated average and median expected volatilities seem to be on a similar order of magnitude for both tone conditions. We do not find a statistically significant difference between average expected volatilities for stocks with positive and negative tone news. Neither we find any statistically significant difference between median expected volatilities for stocks with different tone news. Our results are in line with the findings of Kim and Kim (2014), but conflict with the results by Antweiler and Frank (2004). On contrary to our expectations in Hypothesis 3, this result suggests that subjects tend to expect similar levels of volatility for each stock after reading positive or negative tone news.

<Please Insert Table 7 Panel A about Here>

Table 5 reports the descriptive statistics of expected volatility estimates for stocks in different performance groups. Average (median) expected volatility for the increasing, decreasing and no trend stocks is 3.8% (2.1%), 6.5% (3.9%), and 5.5% (3.7%), respectively. Similarly, Table 7 Panel A shows that expected volatility appears to be higher for the decreasing and no trend stocks than for the increasing stocks across tone conditions. Average expected volatility for stocks with positive tone news is 3.6% and with negative tone news is 3.5% for the increasing stocks, while it is 6.0% and 6.4%, respectively for the decreasing stocks. We recall from Table 3 that the actual volatility of all stocks is around 8%. This implies that subjects seem to provide a wider range of possible stock prices in the next month for stocks that performed poorly than for stocks that performed well in the past, since they perceive these stocks as more risky. However, their estimates are still understated relatively to the actual volatility of stocks.

<Please Insert Table 7 Panel B about Here>

⁶ We miss one upper and lower pricing estimate for stocks A, K, and L due to supposedly subjects' inattentiveness.

Table 7, Panel B reports the results of expected volatility for our sample of the individual stocks in different tone conditions. Similar to our results in Panel A, we do not find evidence of the tone effect of news on expected volatility for the individual stocks. The differences between average and median expected volatilities for the individual stocks with positive and negative tone news are insignificant. Similarly to the results for aggregated data, we find that the increasing stocks tend to have the narrowest volatility estimates with the lowest volatility of 2.3% fetched for stock I for the negative tone condition and the highest of 4.8% for stock H in the negative tone condition. The widest expected volatility estimates are reported for the decreasing and no trend stocks. The lowest expected volatility for the decreasing stocks is observed for stock G in the negative tone condition and the highest of 8.8% for stock I in the positive and negative tone conditions. Similarly, the lowest expected volatility is equal to 3.3% for the no trend stock B in the negative tone condition and the highest is 8.9% for the no trend stock L in the positive tone condition. The following result summarizes our findings for expected volatility.

Result 3a: Subjects seem to estimate similar levels of volatility for both tone conditions.

In contrast to our expectations in Hypothesis 3, these results suggest that subjects appear to disregard the tone of news extracts and to base their volatility estimates merely on the past performance of the stock.

Although beyond the scope of this paper, it is interesting to look at the expected volatility dynamics across different performance group stocks. Subjects seem to expect a higher return and lower volatility for stocks that performed well and a lower return and higher volatility for stocks that performed poorly in the past. As we recall from Table 5, subjects tend to expect a 0.5% return and 3.8% volatility for the increasing stocks, a -0.5% return and 6.5% volatility for the decreasing stocks, and a -1.2% return and 5.5% volatility for the no trend stocks. This result offers support to the low-volatility stock market anomaly. Baker, Bradley and Wurgler (2010) document that between 1968 and 2008 low volatility and low beta portfolios of stocks have demonstrated a combination of high average returns and small drawdowns. This result conflicts with the fundamental economic principle that the risk is compensated with higher expected returns. In the following we summarize our findings:

Result 3b: Subjects seem to expect a higher (lower) return and lower (higher) volatility for stocks that performed well (poorly) in the past.

C. Tone Effect and Beliefs

In this section we examine subjects' responses to additional questions on their beliefs. Table 8 reports the average ratings for confidence, sentiment, potential, and safety for the individual stocks in both tone conditions. We do not find evidence of the tone effect on confidence ratings. Subjects seem to rate their confidence on a similar level in both treatment groups.

<Please Insert Table 8 about Here>

Baker and Wurgler (2007) define sentiment as a belief about future cash flows and investment risks that is not justified by the facts at hand and suggest that investors are subject to sentiment. In this paper we assume that investor sentiment is the main underlying mechanism of the tone effect on the expected stock returns. In particular, we suggest that the tone of news impacts investor sentiment about the economic outlook and influences return expectations (Shleifer and Summers 1990). Table 8 reports average ratings for sentiment about the entire economy for different tone conditions. Confirming our expectations in Hypothesis 4, subjects tend to feel more positively (negatively) about economic prospects after reading positive (negative) tone news. The difference between average sentiment ratings for stocks in positive and negative tone conditions is positive and statistically significant for eight out of twelve stocks and appears for stocks across all performance groups. We observe a positive and statistically significant difference in sentiment ratings for the increasing stocks H and K (t -test, $p=0.076$, $p=0.004$ respectively), the decreasing stocks G, I, and J (t -test, $p=0.059$, $p=0.011$, $p=0.000$, respectively), and the no trend stocks A, B, and D (t -test, $p=0.002$, $p=0.033$, $p=0.013$, respectively). These results support our expectations in Hypothesis 4 and suggest that subjects tend to feel more positively (negatively) about economic prospects after reading positive (negative) tone news. This finding is in line with the intuition by Tetlock (2007) and García (2013). Thus, we suggest that investor sentiment is the underlying mechanism for our main finding in Result 1, which shows that subjects tend to expect higher (lower)

returns for stocks after reading positive (negative) tone news. Investor sentiment seems to drive the effect of the tone of news on subjects' price expectations. We summarize our finding for sentiment ratings in the following result:

Result 4: Subjects tend to rate their sentiment about economic prospects more positively (negatively) after reading positive (negative) tone news.

On contrary to sentiment, ratings for potential measure subjects' sentiment about a particular stock. Although, potential and sentiment ratings are related, they are not exactly the same. As was already mentioned in the implications for the results for the individual stocks, subjects might share different sentiment about the economy as a whole and the performance of their hypothetically own stock. If a stock performs well when the economy performs poorly, subjects might be optimistic about the performance of their stock, but might be pessimistic about the economic outlook in general.

Table 8 reports average ratings for potential in both tone conditions. We report some evidence of the effect of positive and negative tone news on subjects' potential ratings for the decreasing stocks. Table 8 reports a marginally significant difference in average ratings for the decreasing stocks G and J (t -test, $p = 0.085$, $p = 0.041$, respectively). The difference in potential ratings for the no trend stocks A, B, and D is also positive. While it is insignificant, their p -values are very close to a 10% significance level. On the other hand, the results for the increasing stocks are strongly insignificant. This result partially supports our expectations in Hypothesis 5 and is in line with Hypothesis 2 and Results 2a, 2b, and 2c. It seems that subjects are sensitive to the tone of news extracts when their stocks performed poorly in the past. Subjects tend to rate the potential of the decreasing stocks more optimistically (pessimistically) after reading positive (negative) tone news. On the other hand, subjects seem to be completely ignorant about the tone of the news media when rating the potential of the increasing stocks. The following result summarizes our findings.

Result 5: Subjects tend to feel optimistic (pessimistic) about the future potential of the decreasing stocks after reading positive (negative) tone news.

Finally, we examine the subjects' evaluations of the riskiness of the stock market in general and not a particular stock. Table 8 reports average ratings for safety⁷. We find evidence of the tone effect on the perceived safety for the increasing stock F (t -test, $p=0.084$), the decreasing stocks G and J (t -test, $p=0.002$, $p=0.004$, respectively), and the no trend stocks D (t -test, $p=0.070$). Similar to Result 5, we observe some evidence of the tone effect on the safety ratings for stocks across all performance groups, which supports our expectations in Hypothesis 6. Subjects seem to perceive stocks as safer (riskier) after reading positive (negative) tone news.

Result 6: Subjects seem to perceive stocks safer (riskier) after reading positive (negative) tone news.

Overall, in this section we presented evidence of the effect of the tone of news extracts on subjects' beliefs. The news media seem to impact subjects' expectations about future stock returns by influencing their beliefs about the economy. We find the strongest results for the ratings of sentiment about economic prospects that appear to drive our main Result 1.

D. OLS Regression Analysis

In order to get additional insights on the relation between expected return, expected volatility, tone, and subjects' beliefs, we estimate an ordinary least squares (OLS) regression. The purpose of the OLS analysis is to examine the tone effect on expected returns and expected volatilities after controlling for subjects' beliefs. We estimate the following regression:

$$y_{ij} = \alpha_i + \beta_1 D_{TONEi} + \beta_2 X_i^{Control} + \varepsilon_{ij}, \quad (3)$$

where y_{ij} is the expected return of stock i by subject j as a dependent variable estimated as in (1), D_{TONEi} is a tone dummy variable that takes a value of 1 if stock i is accompanied by positive tone news and 0 if stock i is accompanied by negative tone news; $X_i^{Control}$ is a set of control variables, which includes a dummy variable for the increasing stocks ($Increasing_i$) that takes a value of 1 if stock i is classified as an increasing stock, 0 otherwise; a dummy variable for the decreasing stocks ($Decreasing_i$) that takes a value of 1 if stock i is classified as decreasing, 0 otherwise; a dummy variable for simple news ($Simple_i$) that

⁷ We call ratings for riskiness as safety for the convenience since higher ratings indicate safer stock markets.

takes a value of 1 if a news story for stock i is classified as simple and 0 if a news story is classified as complex. We also control for the order, in which stocks appear to each subject. We assign a dummy variable for each stock that takes a value of 1 if this stock appears the first in the experiment for subject j and 0 otherwise. We name these dummy variables $First_{B_j}$, ..., $First_{L_j}$, if the experiment begins with stock B, ..., or L for subject j . We include the actual ratings for $Confidence_{ij}$, $Potential_{ij}$, $Safety_{ij}$, and $Sentiment_{ij}$ for stock i by subject j as additional control variables. The interaction terms $Tone_i \times Simple_i$, $Tone_i \times Inc_i$, $Tone_i \times Dec_i$ capture interactions between the positive tone and simple news, the positive tone and the increasing stocks and the positive tone and the decreasing stocks, respectively. The OLS regression is estimated by using the Newey-West procedure to control for the autocorrelation and heteroskedasticity in error terms⁸.

<Please Insert Table 9 Panel A about Here>

Table 9, Panel A reports the results of the OLS regression as in (3). We begin by estimating our OLS regression just with the dummy variable for the tone and gradually extend our model with other control variables. First and foremost, the dummy variable for the tone is positive and statistically significant for all five OLS regression specifications and survives after including all sets of control variables. Subjects tend to predict a 2.4% higher expected return for stocks that are accompanied by positive tone news than for stocks that are accompanied by negative tone news. This finding supports our main Result 1 and is in line with our expectations in Hypothesis 1. Subjects tend to expect a higher (lower) return for stocks that are accompanied by positive (negative) tone news.

We find that the dummy variable $Simple_i$ is positive and statistically significant. Subjects tend to expect a 1.5% higher return after reading simple than complex news. The coefficient for the interaction term $Tone_i \times Simple_i$ is negative and significant at 10% after including all sets of control variables. This is a not very straightforward result, since both positive tone and simple news have a positive relation with expected returns, but the combination of both has a negative relation. Subjects seem to predict a 1.2%

⁸ This is a procedure designed by Newey and West (1987) that attempts to overcome autocorrelation or correlation, and heteroskedasticity in error terms in the model. Heteroskedasticity in error terms arises when error terms do not have the same variance across all observed points.

lower return for stocks that are accompanied by simple positive tone news than for stocks with simple news or for stocks with positive tone news.

The tone effect is weaker for increasing stocks since the coefficient for the interaction term $Tone_i \times Inc_i$ is negative and marginally statistically significant at 10% after including all sets of control variables. Subjects tend to expect a 1.6% lower return for the increasing stocks that are accompanied by positive tone news than for the no trend stocks that are accompanied by positive tone news. This result supports our Result 2a for the increasing stocks and is in line with our expectations in Hypothesis 2. Subjects seem to be less sensitive to the tone of news extracts when the stock performed well in the past.

Subjects seem to be less confident about higher expected returns. The coefficient for $Confidence_{ij}$ variable is -0.003 ($p=0.006$) and strongly statistically significant. They tend to be more optimistic about the potential of a stock and to be more positive about economic prospects when their expected return is higher. The coefficient for $Potential_{ij}$ is 0.013 ($p=0.000$) and the coefficient for $Sentiment_{ij}$ is 0.004 ($p=0.048$).

Subjects tend to perceive stock markets in general as safer when they expect higher returns. The coefficient for $Safety_{ij}$ is 0.004 ($p=0.020$), which is consistent with the low-volatility stock market anomaly (Baker, Bradley and Wurgler 2010) and is in line with our Result 3b. Subjects appear to associate higher returns with lower risk, which is supported by past empirical studies, but conflicts with the fundamental economic principle of the risk-return trade-off.

<Please Insert Table 9 Panel B about Here>

Table 9, Panel B reports the results of the OLS regression as in equation (3), where the dependent variable is expected volatility of stock i by subject j . The difference in number of observations results from missing estimates due to subjects' inattentiveness⁹. Similar to our results in Table 7, we do not find any evidence of the tone effect on expected volatility. The coefficient for the tone dummy variable is insignificant for all OLS regression specifications and with all control variables included. Thus, similar to

⁹ We miss three expected volatility estimates for stocks A, K, and L from treatments 1, 2, and 2. Additionally, we miss eight Confidence ratings for stocks A, C, D, H, and L and one Sentiment rating for stock E.

Result 3a and Figure 2 and on contrary to the evidence by Antweiler and Frank (2004), subjects seem to be completely unaffected by the tone of news extracts when asked to provide upper and lower pricing estimates.

Consistent with our earlier findings in Tables 5 and 7 and Result 3b, we observe from Table 9, Panel B that expected volatility for the increasing stocks tends to be lower than for the no trend stocks. The estimated OLS coefficient for *Increasing_i* dummy variable is negative and statistically significant. Subjects tend to expect 1.6% lower volatility for the increasing than for the no trend stocks. Together with the results from Table 9, Panel A for *Increasing_i* dummy variable, subjects tend to expect higher return and lower volatility for the increasing stocks than for the no trend stocks. This result again supports the low-volatility stock market anomaly defined by Baker, Bradley and Wurgler (2010) and conflicts with the fundamental economic principle that higher risk is compensated with a higher return.

Last but not least, the coefficient for *Safety_{ij}* is negative and statistically significant. Subjects tend to expect 0.5% lower volatility for stocks when they rate stock markets as safer. This result makes an intuitive sense as subjects expect lower volatility for safer stocks and supports our intention to use expected volatility as a riskiness measure (Table 9, Panel B).

E. Tone Effect and Investment Actions

So far we have discussed confirming evidence of the tone effect on subjects' expectations about stock's future performance and their beliefs about financial markets. What we are interested to know now is whether the news media influence subjects' actions. By the end of the day, we are interested to see whether the tone of news actually shifts the aggregate demand for equities. After all, if investor sentiment and stock price expectations did not affect investor actions, there would be no point in investigating it. Thus, as a part of the experiment, we ask subjects to imagine that they currently possess shares of each stock. They are then asked to choose among three investment actions: to buy, to sell, or to continue holding these shares.

Table 10 reports the proportion of subjects that choose to buy, sell, or continue holding their hypothetically own stocks after reading positive and negative tone news. A different number of observations for positive and negative tone conditions are caused by omitted answers by some subjects¹⁰. A number of “buys” reduces from 31.3% in the positive tone condition to 18.9% in the negative tone condition when we aggregate all data. A change represents 12.3% and is statistically significant (z -test, $p = 0.036$). A number of “sells”, on the other hand, rises from 25.6% in the positive tone condition to 36.2% in the negative tone condition for all data. A change is 10.6% and marginally statistically significant (z -test, $p = 0.054$). A number of “holds” is similar for both tone conditions.

<Please Insert Table 10 about Here>

We do not observe a significant difference in the proportions for “buy”, “sell”, or “hold” actions among different tone conditions for the increasing stocks. For the decreasing stocks, a significant difference is observed only for the number of “sells.” It increases from 28.8% for positive tone news to 45.9% for negative tone news and a change is statistically significant (z -test, $p = 0.065$). For the no trend stocks, a number of “sells” also increases significantly from 27.7% for positive tone news to 31.9% for negative tone news (z -test, $p = 0.070$). These results are in line with our expectations in Hypothesis 7. Subjects seem to be influenced by the tone and are more likely to buy (sell) additional stocks after reading positive (negative) than negative (positive) tone news. Subjects are more likely to sell stocks after reading negative than positive tone news when the stock performed poorly in the past or when there is no clear indications of the past performance of the stock. This result confirms our expectations in Hypothesis 2 of the asymmetric effect of the news media and Results 2b and 2c of the more pronounced tone effect for the decreasing and no trend stocks. Result 7 summarizes our findings for investment actions.

Result 7: (Second main finding) Subjects are more likely to buy (sell) additional stocks after reading positive (negative) tone news. The effect of the tone of news is especially pronounced for the decreasing and no trend stocks.

¹⁰ We miss eight observations for stocks B, F, H, I, J, and K from treatment 2 and three observations for stocks H, F, and G from treatment 1.

Thus, news media seem to influence not only the way how people *think* about information discussed in news reports, but also what people *do* in response to this information¹¹. The tone of news media might be one of those pseudo-signals that afflict the judgment of investors in general and might contribute to the shifts in the aggregate demand for equities, thus causing mispricing and market anomalies.

IV. Conclusion

In this paper we investigate the effect of the tone of news on subjects' price expectations and beliefs. To the best of our knowledge, this is the first paper that designs an experiment that isolates the tone of news from the content and tests its effect on subjects' beliefs about financial markets. In this paper we attempt to build a bridge between the psychology literature on the framing effect by Kahneman and Tversky (1984, 1986), studies on the news media framing effect in the journalism, political science, and mass communication literature as in Price, Tewksbury and Powers (1997), Nelson, Clawson and Oxley (1997), Schuck and de Vreese (2006, 2008), and Valkenburg et al. (1999) and the literature on the effect of the news media content on the financial market performance as in Antweiler and Frank (2004), Tetlock (2007), Engelberg and Parson (2011), Dougal et al. (2012), García (2013) and Kim and Kim (2014).

We find that the tone of news extracts significantly impacts stock price expectations. Subjects tend to predict higher (lower) stock prices for stocks after reading positive (negative) tone news. The tone effect on price expectations is especially pronounced for the decreasing stocks, while the effect is weak for the increasing stocks. This result suggests the asymmetry of the tone effect and might indicate that people are more sensitive to salient attributes of a newspaper article during economic downturns. However, we do not find the significant tone effect on subjects' expectations about future volatility of a stock. The tone effect also seems to influence subjects' sentiment about economic conditions. Subjects feel more positively (negatively) about the economy after reading positive (negative) tone news.

¹¹ At least they say they would. The reader should keep in mind that subjects were asked to make a trading decision on hypothetically owned stocks. No actual trade took place and no actual money was involved.

Additionally, we find some evidence of the tone effect on subjects' beliefs about the future potential of the decreasing stocks and about the riskiness of stock markets. Subjects appear to expect higher (lower) returns and low (high) volatilities for stocks that performed well in the past, which conflicts with the fundamental economic principle of the risk-return tradeoff, but supports the low-volatility stock market anomaly reported by Baker, Bradley and Wurgler (2010). Finally, subjects' investment decisions tend to be influenced by the tone of news extracts. They are more likely to buy additional shares after reading positive than negative tone news and to sell existing shares after reading negative than positive tone news.

Overall, our results suggest that the impression about the economy from news reports might contribute to the formation of stock price expectations by private investors and their sentiment. As a result, private investors might be easily misled and might make irrational decisions that create stock market anomalies. Furthermore, in this paper we show that the tone of the news media impacts not only the way how investors *think*, but also what they *do* in response to their beliefs.

Practitioners might be interested in designing tools to analyze the tone of the news media in order to predict prevailing investor sentiment on the stock market. For the future research we suggest to conduct a more indebt analysis on the tone effect on investor actions by asking subjects to actually trade a stock. Additionally, we suggest to investigate the effect of the performance of an individual stock on investor sentiment during different market conditions. The low-volatility stock market anomaly also requires a more profound investigation.

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Table 1. Demographics

This table reports the demographics of the subject pool per treatment group. Apart from general questions about gender, age, and educational background, subjects were asked questions about their experience in investing, familiarity with financial concepts, and the frequency of following news. The questions were phrased in the following way: “Do you/your parents/friends have any experience in stock market investing?”, “Are you familiar with financial concepts?”, and “How frequently do you follow economic news?” The order, in which stocks were presented to subjects, was randomized by starting the experiment with a different stock for each subject. The table reports a number of subjects that start the experiment with a particular stock per treatment.

	Treatment 1	Treatment 2
Gender		
Male	26	27
Female	14	13
Average Age	23.3	23.1
Education		
Master Economics	7	0
Master Econometrics	0	2
Master Finance	5	7
Master Financial Management	2	0
Bachelor IBA	18	20
Bachelor Economics	2	3
Other	6	8
Experience in Investing		
Yes	23	22
No	17	18
Familiarity with financial concepts		
Yes	30	25
No	8	9
Some	2	6
News Following		
Daily	9	10
Once a week	9	9
Often	6	5
Rarely	11	6
Never	5	10
Stock Order		
A – L	3	3
B – A	3	2
C – B	2	3
D – C	3	5
E – D	4	4
F – E	4	4
G – F	2	3
H – G	3	3
I – H	5	3
J – I	4	3
K – J	4	4
L – K	3	3
Total	40	40

Table 2. Tone of News

The table summarizes the tone of news that accompanies each stock in each treatment group. In each treatment subjects were presented with twelve graphs that plot the past performance of the twelve real U.S. companies listed on the S&P 500 index. Each stock was denoted with a letter. For each stock subjects were asked to read a news extract that discussed exactly the same content, but differed in the tone it was written across treatment groups. Subjects in each treatment read opposite tone news extracts. Within each treatment, subjects read six positive tone news extracts for six stocks and six negative tone news extracts for other six stocks.

Stocks	Tone of News	
	Treatment 1	Treatment 2
A	Positive	Negative
B	Negative	Positive
C	Positive	Negative
D	Positive	Negative
E	Negative	Positive
F	Negative	Positive
G	Positive	Negative
H	Negative	Positive
I	Positive	Negative
J	Negative	Positive
K	Positive	Negative
L	Negative	Positive

Table 3. List of S&P Stocks

This table presents a list of S&P 500 stocks, which prices were used in the experiment. Subjects observed prices of each stock from the corresponding time interval, which was equal to 50 historical monthly trading periods. The realized prices for each stock were standardized to 100 in the trading period 0. Current price is the standardized price realized on the last trading period. Next period price is the standardized price realized in the next trading period, which subjects were asked to predict. Time intervals for each stock are selected in such a way that the stock belongs to one of the predetermined performance groups: increasing, decreasing, or no trend. A stock is assigned to a “Decreasing” (“Increasing”) performance group if it experiences losses more than 60% (less than 40%) of the time during the last reported 25 trading periods and exhibits a statistically significant negative (positive) time trend coefficient for 50 trading periods. A stock is assigned to a “No Trend” performance group if it experiences losses 40% to 60% of the time during the last reported 25 trading periods and does not exhibit a statistically significant time trend coefficient for 50 trading periods. The table reports the performance group of each stocks, a percentage of time it experiences gains in the last reported 25 trading periods and the estimated time trend coefficient for 50 trading periods. Each stock exhibits similar levels of volatility. The ultimate column reports the estimated standard deviation of each stock returns. Subjects can only observe the assigned name of the stock, a graph of standardized prices over 50 monthly trading periods and its current standardized price, while the exact time interval, price, and the name of each stock remains unobservable. Statistical significance of the time trend coefficient is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level, respectively.

Stock	Company Name	Time interval	Current Price	Next Price	Period	Performance	% Gain 25 Periods	Time Trend Coefficient	t-Stat.	Volatility
A	Ace	03.2005-05.2009	102.23	99.17		No Trend	56%	0.08	1.27	7.85%
B	Actavis	06.2004-08.2008	79.14	81.57		No Trend	52%	-0.05	-1.58	8.04%
C	AETNA	10.2001-12.2005	646.93	642.44		Increasing	80%	0.76***	19.25	7.91%
D	Becton Dickinson	02.1998-04.2002	111.92	114.29		No Trend	56%	-0.03	-0.79	8.19%
E	Bank of NY Mellon	04.2006-06.2010	69.74	65.18		Decreasing	32%	-0.32***	-6.19	8.14%
F	Archer-Danls.	09.2002-11.2006	300.33	285.73		Increasing	72%	0.58***	15.03	7.83%
G	Chevron	03.1999-05.2003	82.83	94.76		Decreasing	36%	-0.19***	-5.68	7.50%
H	Baker Hughes	02.1994-04.1998	206.25	205.94		Increasing	64%	0.58***	20.10	8.09%
I	Cambell Soup	01.1999-03.2003	41.69	36.14		Decreasing	36%	-0.47***	-10.90	8.50%
J	Bemis	06.2005-08.2009	98.33	94.88		Decreasing	40%	-0.12***	-4.03	7.45%
K	Cigna	11.2003-01.2008	288.51	267.35		Increasing	68%	0.73***	22.00	7.62%
L	Cardinal Health	10.2004-12.2008	70.78	77.97		No Trend	44%	-0.06	-1.02	7.37%

Table 4. List of Words

This table presents a list of modifier words that we use to manipulate the tone in news extracts. Modifier words are adjectives and adverbs that add a description to the head. Quirk et al. (1985) distinguish between emphasizees, amplifiers, and downtoners. Emphasizer adjectives and adverbs have a general heightening effect and add force to the content they describe. Amplifier adjectives and adverbs scale upwards from an assumed norm and denote a high or extreme degree. Downtoner adjectives and adverbs have a lowering effect, scaling downwards from an assumed norm. We create our own list of emphasizee, amplifier, and downtoner words by following the definitions and examples of Quirk et al. (1985).

Emphasizers	Amplifiers	Downtoners
additional(ly)	a lot of	a bit
Alarming	as much as	anticipated
Other	broadly	bare(ly)
Astonishing	considerable(ly)	expectable
Controllable	extreme(ly)	faint(ly)
Crucial	far	few
devastating(ly)	heavy	hardly
disappointing(ly)	huge	inadequate(ly)
distinct(ly)	much	insignificant(ly)
dramatical(ly)	massive(ly)	insufficient(ly)
Drastic	pronounced	just
Encouraging	quickly	light
Especially	sharp(ly)	little
gloomy(ly)	significant(ly)	meager(ly)
Healthy	sizable(ly)	mediocre
impressive(ly)	skyrocketing	mild
improbable(ly)	strong(ly)	minuscule
Ineffective	substantial(ly)	moderate(ly)
Notable		modest(ly)
noticeable(ly)		negligible(ly)
Painful		no more than
particular(ly)		not so
Persistent		occasional(ly)
promising(ly)		only
Rampant		ordinary
remarkable(ly)		predictable(ly)
Satisfactory		probable
Shocking		regular
Surely		slight(ly)
Staggering		some
surprising(ly)		somewhat
unexpected(ly)		tiny
unjustifiable(ly)		unsatisfactory
visible(ly)		unsubstantial(ly)
Vital		
worrying(ly)		

Table 5. Descriptive Statistics

This table presents the descriptive statistics of our data on the expected return and expected volatility estimates provided by subjects during the experiment. Expected return is calculated by taking the log difference between the predicted and the current price as in the following:

$$r_{ij}^{EXP} = \ln(P_{ij}^{PRED}) - \ln(P_i^{CURR}).$$

Expected volatility is calculated by following the Ben-David, Graham, and Harvey's (2013) approach to estimate expected volatility at a 90% confidence level as in following:

$$VOLA_{ij}^{EXP} = (\ln(P_{ij}^{UP}/P_i^{CURR}) - \ln(P_{ij}^{LOW}/P_i^{CURR})) / 2.65.$$

Positive tone includes the expected return and expected volatility estimates for stocks A, C, D, G, I, and K in Treatment 1 and for stocks B, E, F, H, J, and L in Treatment 2 that are accompanied by positive tone news extracts. Negative tone includes the expected return and expected volatility estimates for stocks B, E, F, H, J, and L in Treatment 1 and for stocks A, C, D, G, I, and K in Treatment 2 that are accompanied by negative tone news. The increasing stocks are stocks that exhibit a positive and statistically significant time trend coefficient over 50 trading periods and a gain of more than 60% of the time during the last reported 25 trading periods. The increasing stocks are C, F, H, and K. The decreasing stocks are stocks that exhibit a negative and statistically significant time trend coefficient over our selected 50 trading periods and a loss of more than 60% of the time during the last reported 25 trading periods. These stocks are E, G, I, and J. The no trend stocks are stocks that do not exhibit a significant time trend coefficient during our selected 50 trading periods and experience gains or losses of 40% to 60% of the time during the last reported 25 trading periods. OBS is the total number of observations.

	Mean	Median	St. Dev.	Min	Max	OBS
Expected Return						
Positive Tone	0.72%	0.74%	5.87%	-34.76%	36.41%	480
Negative Tone	-1.15%	0.00%	6.67%	-45.29%	19.37%	480
Increasing Stocks	0.49%	0.28%	5.36%	-25.39%	19.32%	160
Decreasing Stocks	-0.49%	0.00%	7.13%	-32.91%	36.41%	160
No Trend Stocks	-1.22%	0.07%	8.32%	-45.29%	16.03%	160
Expected Volatility						
Positive Tone	5.14%	3.51%	5.71%	0.00%	41.46%	480
Negative Tone	5.16%	3.34%	5.92%	0.00%	47.27%	477
Increasing Stocks	3.79%	2.13%	4.85%	0.01%	29.75%	160
Decreasing Stocks	6.50%	3.88%	7.28%	0.00%	41.46%	160
No Trend Stocks	5.45%	3.73%	5.32%	0.03%	28.76%	159

Table 6. Panel A. Tone Effect on Expected Return – Pooled Data

This table presents the mean and median expected return for each tone condition. The expected return is calculated by taking the log difference between the subject's predicted and current price for each stock. We pool all data together for positive and negative tone conditions from Treatments 1 and 2 as well as we report the mean and median expected returns for positive and negative tone conditions in each treatment. *Pos. Pooled (Neg. Pooled)* reports the mean and median expected returns for stocks that are accompanied by positive (negative) tone news both in Treatments 1 and 2. Such stocks are A, C, D, G, I, and K (B, E, F, H, J, and L) for Treatment 1 and B, E, F, H, J, and L (A, C, D, G, I, and K) for Treatment 2. *T1 pos. (T1 neg.)* reports the mean and median expected returns for stocks that are accompanied by positive (negative) tone news in Treatment 1 only. Such stocks are A, C, D, G, I, and K (B, E, F, H, J, and L). *T2 pos. (T2 neg.)* reports the mean and median expected returns for stocks that are accompanied by positive (negative) tone news in Treatment 2 only. These stocks are B, E, F, H, J, and L (A, C, D, G, I, and K). We report the mean and median expected returns for all data as well as for each performance group such as *Increasing stocks* C, F, H, and K, *Decreasing stocks* E, G, I, and J, *No trend stocks* A, B, D, and L. The tone effect is measured by testing for the difference in mean and median expected returns for positive and negative tone conditions. We perform a *t*-test for the equality in means and Mann-Whitney test for the equality in medians. *p*-values are reported in parentheses. Statistical significance is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level, respectively.

	All data			Increasing Stock			Decreasing Stock			No Trend Stock		
	Mean	Median	OBS	Mean	Median	OBS	Mean	Median	OBS	Mean	Median	OBS
Pos. Pooled	0.007*** (0.007)	0.007*** (0.000)	480	0.011*** (0.000)	0.005*** (0.000)	160	0.006 (0.216)	0.007** (0.032)	160	0.003 (0.532)	0.008* (0.051)	160
Neg. Pooled	-0.011** (0.000)	0.000** (0.042)	480	0.004 (0.240)	0.001** (0.043)	160	-0.018*** (0.000)	-0.010*** (0.001)	160	-0.020*** (0.001)	0.000* (0.083)	160
Diff.	0.018*** (0.000)	0.007*** (0.000)		0.007 (0.149)	0.003** (0.028)		0.024*** (0.000)	0.017*** (0.000)		0.024*** (0.003)	0.008*** (0.009)	
T1 pos.	0.010*** (0.007)	0.005*** (0.000)	240	0.011** (0.034)	0.005*** (0.001)	80	0.005 (0.489)	0.004 (0.329)	80	0.013** (0.011)	0.007*** (0.007)	80
T2 neg.	-0.004 (0.156)	0.001 (0.677)	240	0.010*** (0.008)	0.004*** (0.003)	80	-0.020*** (0.003)	-0.010*** (0.001)	80	-0.004 (0.462)	0.004 (0.777)	80
Diff.	0.014*** (0.003)	0.004*** (0.003)		0.001 (0.915)	0.000 (0.767)		0.026** (0.017)	0.014*** (0.003)		0.017** (0.023)	0.003 (0.123)	
T1 neg.	-0.018*** (0.000)	-0.001** (0.015)	240	-0.001 (0.830)	0.000 (0.986)	80	-0.015** (0.029)	-0.007 (0.109)	80	-0.037*** (0.001)	-0.010*** (0.010)	80
T2 pos.	0.004 (0.275)	0.010*** (0.001)	240	0.012*** (0.000)	0.008*** (0.000)	80	0.007 (0.260)	0.016* (0.055)	80	-0.006 (0.433)	0.010 (0.901)	80
Diff.	-0.022*** (0.000)	-0.011*** (0.000)		-0.013* (0.067)	-0.008*** (0.005)		-0.023** (0.017)	-0.024*** (0.008)		-0.030** (0.034)	-0.021* (0.061)	

Table 6. Panel B. Tone Effect on Expected Return – Individual Stocks

This table reports the mean and median expected returns for each stock for each tone condition. The expected return is calculated by taking the log difference between the predicted and current price for each stock as om (1). *Pos* denotes the mean and median expected returns of stocks that are accompanied by positive tone news. *Neg* denotes the mean and median expected returns of stocks that are accompanied by negative tone news. The tone effect is tested by taking the difference between the mean and median expected returns. We use a *t*-test to test for the equality in means and Mann-Whitney test to test for the equality in medians. *p*-values are reported in parentheses. Statistical significance is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level respectively.

Stock	Perform	Tone		Mean		Diff.	Median		Diff.	OBS	
		Pos	Neg	Pos	Neg		Pos	Neg		Pos	Neg
A	No Trend	T1	T2	0.026*** (0.002)	-0.001 (0.812)	0.028** (0.014)	0.016*** (0.003)	0.007 (0.642)	0.008* (0.060)	40	40
B	No Trend	T2	T1	0.024*** (0.000)	0.004 (0.491)	0.019** (0.019)	0.021*** (0.000)	0.010 (0.117)	0.010* (0.061)	40	40
C	Increasing	T1	T2	0.018** (0.020)	0.022*** (0.000)	-0.004 (0.647)	0.010*** (0.000)	0.008*** (0.000)	0.001 (0.988)	40	40
D	No Trend	T1	T2	0.000 (0.996)	-0.006 (0.426)	0.006 (0.515)	0.000 (0.426)	0.001 (0.965)	0.000 (0.769)	40	40
E	Decreasing	T2	T1	-0.002 (0.762)	-0.048*** (0.000)	0.045*** (0.001)	0.001 (0.907)	-0.032*** (0.000)	0.034*** (0.002)	40	40
F	Increasing	T2	T1	0.006 (0.150)	-0.005 (0.470)	0.012 (0.169)	0.004 (0.234)	-0.002 (0.366)	0.007 (0.122)	40	40
G	Decreasing	T1	T2	0.009 (0.300)	-0.013** (0.032)	0.022** (0.0364)	0.000 (0.684)	-0.010* (0.067)	0.010 (0.165)	40	40
H	Increasing	T2	T1	0.017*** (0.000)	0.002 (0.800)	0.014 (0.213)	0.013*** (0.000)	0.001 (0.245)	0.011*** (0.009)	40	40
I	Decreasing	T1	T2	0.002 (0.857)	-0.027** (0.031)	0.030 (0.122)	0.007 (0.267)	-0.016** (0.012)	0.023*** (0.007)	40	40
J	Decreasing	T2	T1	0.017** (0.044)	0.017** (0.030)	0.000 (0.957)	0.025*** (0.003)	0.016** (0.016)	0.008 (0.458)	40	40
K	Increasing	T1	T2	0.004 (0.540)	-0.001 (0.765)	0.005 (0.496)	0.002 (0.414)	0.000 (0.981)	0.002 (0.718)	40	40
L	No Trend	T2	T1	-0.038** (0.018)	-0.079*** (0.000)	0.041* (0.100)	-0.037*** (0.010)	-0.041*** (0.000)	0.004 (0.171)	40	40

Table 7. Panel A. Tone Effect on Expected Volatility – Pooled Data

This table presents mean and median expected volatility in each tone condition. The expected volatility is calculated by following the approach by Ben-David, Graham, and Harvey (2013) as in the following:

$$VOLA_{ij}^{EXP} = (\text{LN}(P_{ij}^{Upper} / P_i^{Current}) - \text{LN}(P_{ij}^{Lower} / P_i^{Current})) / 2.65,$$

which estimates expected volatility at a 90% confidence interval. We pool together all data for positive and negative tone conditions for Treatments 1 and 2 as well as we report mean and median expected volatility for positive and negative tone conditions in each treatment. *Pos. Pooled (Neg. Pooled)* reports mean and median expected volatility for stocks that are accompanied by positive (negative) tone news both in Treatments 1 and 2. Such stocks are A, C, D, G, I, and K (B, E, F, H, J, and L) for Treatment 1 and B, E, F, H, J, and L (A, C, D, G, I, and K) for Treatment 2. *T1 pos. (T1 neg.)* reports mean and median expected volatility for stocks that are accompanied by positive (negative) tone news stories in Treatment 1 only. Such stocks are A, C, D, G, I, and K (B, E, F, H, J, and L). *T2 pos. (T2 neg.)* reports mean and median expected volatility for stocks that are accompanied by positive (negative) tone news stories in Treatment 2 only. These stocks are B, E, F, H, J, and L (A, C, D, G, I, and K). We report mean and median expected volatility for all data as well as for each performance group such as *Increasing stocks* C, F, H, and K, *Decreasing stocks* E, G, I, and J, and *No trend stocks* A, B, D, and L. The tone effect is measured by testing for the difference in mean and median expected volatility in positive and negative tone conditions. We perform a *t*-test for the equality in means and Mann-Whitney test for the equality in medians. *p*-values are reported in parentheses. Statistical significance is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level, respectively.

	All data			Increasing Stock			Decreasing Stock			No Trend Stock		
	Mean	Median	OBS	Mean	Median	OBS	Mean	Median	OBS	Mean	Median	OBS
Pos. Pooled	0.051*** (0.000)	0.035*** (0.000)	480	0.036*** (0.000)	0.020*** (0.000)	160	0.060*** (0.000)	0.043*** (0.000)	160	0.057*** (0.000)	0.037*** (0.000)	160
Neg. Pooled	0.051*** (0.000)	0.033*** (0.000)	477	0.035*** (0.000)	0.019*** (0.000)	159	0.064*** (0.000)	0.039*** (0.000)	160	0.054*** (0.000)	0.038*** (0.000)	158
Diff.	0.000 (0.967)	0.001 (0.843)		0.000 (0.940)	0.000 (0.750)		-0.003 (0.624)	0.004 (0.868)		0.002 (0.650)	0.000 (0.758)	
T1 pos.	0.048*** (0.000)	0.029*** (0.000)	240	0.033*** (0.000)	0.017*** (0.000)	80	0.066*** (0.000)	0.044*** (0.000)	80	0.044*** (0.000)	0.033*** (0.000)	80
T2. neg.	0.046*** (0.000)	0.027*** (0.000)	238	0.029*** (0.000)	0.017*** (0.000)	79	0.065*** (0.000)	0.044*** (0.000)	80	0.044*** (0.000)	0.032*** (0.000)	79
Diff.	0.001 (0.742)	0.001 (0.790)		0.003 (0.635)	0.000 (0.689)		0.001 (0.910)	0.000 (0.743)		0.000 (0.947)	0.000 (0.628)	
T1 neg.	0.056*** (0.000)	0.037*** (0.000)	239	0.042*** (0.000)	0.025*** (0.000)	80	0.063*** (0.000)	0.037*** (0.000)	80	0.064*** (0.000)	0.047*** (0.000)	79
T2 pos.	0.054*** (0.000)	0.037*** (0.000)	240	0.039*** (0.000)	0.025*** (0.000)	80	0.054*** (0.000)	0.041*** (0.000)	80	0.069*** (0.000)	0.054*** (0.000)	80
Diff.	0.002 (0.706)	0.000 (0.729)		0.002 (0.743)	0.000 (0.907)		0.008 (0.358)	-0.004 (0.886)		-0.005 (0.606)	-0.007 (0.408)	

Table 7. Panel B. Tone Effect on Expected Volatility – Individual Stocks

This table reports mean and median expected volatility for each stock for each tone condition. Expected volatility is calculated by following the approach by Ben-David, Graham, and Harvey (2013) as in the following:

$$VOL_{ij}^{EXP} = (\text{LN}(P_{ij}^{Upper} / P_i^{Current}) - \text{LN}(P_{ij}^{Lower} / P_i^{Current})) / 2.65,$$

which estimates the expected volatility at a 90% confidence interval. *Pos* denotes mean and median expected volatility of stocks that are accompanied by positive tone news. *Neg* denotes mean and median expected volatility for stocks that are accompanied by negative tone news. The tone effect is tested by taking the difference between mean and median expected volatilities. We use a *t*-test to test for the equality in means and Mann-Whitney test to test for the equality in medians. *p*-values are reported in parentheses. Statistical significance is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level, respectively.

Stock	Perform	Tone of News		Mean		Diff.	Median		Diff.	OBS	
		Pos	Neg	Pos	Neg		Pos	Neg		Pos	Neg
A	No Trend	T1	T2	0.053*** (0.000)	0.056*** (0.000)	-0.004 (0.726)	0.036*** (0.000)	0.040*** (0.000)	-0.003 (0.562)	40	39
B	No Trend	T2	T1	0.050*** (0.000)	0.042*** (0.000)	0.008 (0.311)	0.035*** (0.000)	0.032*** (0.000)	0.003 (0.441)	40	40
C	Increasing	T1	T2	0.029*** (0.000)	0.023*** (0.000)	0.007 (0.319)	0.014*** (0.000)	0.017*** (0.000)	-0.003 (0.954)	40	40
D	No Trend	T1	T2	0.037*** (0.000)	0.033*** (0.000)	0.004 (0.608)	0.017*** (0.000)	0.022*** (0.000)	-0.005 (0.616)	40	40
E	Decreasing	T2	T1	0.061*** (0.000)	0.073*** (0.000)	-0.011 (0.452)	0.050*** (0.000)	0.054*** (0.000)	-0.003 (0.923)	40	40
F	Increasing	T2	T1	0.031*** (0.000)	0.036*** (0.000)	-0.004 (0.555)	0.026*** (0.000)	0.025*** (0.000)	0.001 (0.707)	40	40
G	Decreasing	T1	T2	0.046*** (0.000)	0.043*** (0.000)	0.003 (0.764)	0.028*** (0.000)	0.032*** (0.000)	-0.004 (0.651)	40	40
H	Increasing	T2	T1	0.047*** (0.000)	0.048*** (0.000)	-0.001 (0.936)	0.021*** (0.000)	0.023*** (0.000)	-0.002 (0.806)	40	40
I	Decreasing	T1	T2	0.088*** (0.000)	0.088*** (0.000)	0.000 (0.991)	0.055*** (0.000)	0.067*** (0.000)	-0.012 (0.806)	40	40
J	Decreasing	T2	T1	0.048*** (0.000)	0.053*** (0.000)	-0.005 (0.595)	0.036*** (0.000)	0.036*** (0.000)	0.000 (0.980)	40	40
K	Increasing	T1	T2	0.037*** (0.000)	0.037*** (0.000)	0.001 (0.960)	0.019*** (0.000)	0.019*** (0.000)	-0.001 (0.546)	40	39
L	No Trend	T2	T1	0.089*** (0.000)	0.087*** (0.000)	0.002 (0.927)	0.066*** (0.000)	0.058*** (0.000)	0.008 (0.713)	40	39

Table 8. Tone Effect – Investor Beliefs

This table reports the average ratings on confidence, sentiment, potential, and safety for each stock for positive and negative tone conditions. Subjects are asked to rate on a seven-point scale how confident they are about their predictions of the price where 1 is not confident at all, 7 is extremely confident (*Confidence*); how they feel about a future potential of stock *i* where 1 is extremely pessimistic and 7 is extremely optimistic (*Potential*); their sentiment about economic prospects where 1 is extremely negative and 7 is extremely positive (*Sentiment*); and how they would assess the riskiness of the stock market where 1 is extremely risky and 7 is extremely safe (*Safety*). *Pos* reports average ratings for subjects that read positive tone news. *Neg* reports average ratings for subjects that read negative tone news. *T1* denotes Treatment 1. *T2* denotes Treatment 2. Each stock is classified into one of the performance groups: *Increasing*, *Decreasing*, and *No Trend*. We perform a *t*-test to test for the equality in mean ratings. OBS is the number of observations. *p*-values are reported in parentheses. Statistical significance is denoted by asterisks *, **, and *** at a 10%, 5%, and 1% significance level, respectively.

	Performance	Tone		Confidence			Sentiment			Potential			Safety			OBS	
		Pos	Neg	Pos	Neg	Diff.	Pos	Neg	Diff.	Pos	Neg	Diff.	Pos	Neg	Diff.	T1	T2
A	No Trend	T1	T2	4.275 (0.175)	3.794 (0.352)	0.480 (0.107)	4.550*** (0.003)	4.025 (0.875)	0.524** (0.029)	4.525*** (0.002)	4.125 (0.535)	0.400 (0.126)	3.800 (0.290)	3.475*** (0.009)	0.325 (0.229)	40	40
B	No Trend	T2	T1	4.025 (0.909)	4.100 (0.617)	-0.074 (0.800)	4.400** (0.021)	3.675 (0.107)	0.725*** (0.006)	4.350** (0.033)	3.975 (0.888)	0.375 (0.118)	3.900 (0.533)	3.925 (0.714)	-0.024 (0.923)	40	40
C	Increasing	T1	T2	4.650*** (0.004)	4.358 (0.118)	0.291 (0.354)	4.775*** (0.000)	4.425* (0.064)	0.350 (0.212)	5.050*** (0.000)	4.875*** (0.000)	0.175 (0.504)	4.550** (0.013)	4.500** (0.033)	0.049 (0.872)	40	40
D	No Trend	T1	T2	4.564*** (0.005)	4.076 (0.691)	0.487* (0.075)	4.550*** (0.000)	4.125 (0.430)	0.425** (0.048)	4.425** (0.013)	4.050 (0.756)	0.375 (0.105)	4.225 (0.183)	3.775 (0.220)	0.450* (0.070)	40	40
E	Decreasing	T2	T1	3.875 (0.585)	4.075 (0.685)	-0.200 (0.495)	3.846 (0.323)	3.700* (0.069)	0.146 (0.513)	4.050 (0.806)	3.600** (0.037)	0.450 (0.105)	3.600** (0.030)	3.550** (0.012)	0.050 (0.840)	40	40
F	Increasing	T2	T1	3.875 (0.535)	4.225 (0.220)	-0.350 (0.198)	4.425** (0.030)	4.325** (0.035)	0.099 (0.679)	4.375* (0.087)	4.375* (0.070)	0.000 (1.000)	4.250 (0.124)	3.875 (0.390)	0.375* (0.084)	40	40
G	Decreasing	T1	T2	4.150 (0.486)	4.125 (0.575)	8.275 (0.935)	4.075 (0.618)	3.600* (0.051)	0.475* (0.059)	3.925 (0.722)	3.425*** (0.005)	0.500* (0.085)	3.800 (0.389)	3.150*** (0.000)	0.650** (0.025)	40	40
H	Increasing	T2	T1	4.500** (0.020)	4.400** (0.047)	0.099 (0.725)	4.825*** (0.000)	4.425** (0.019)	0.400* (0.076)	4.975*** (0.000)	4.650*** (0.001)	0.324 (0.224)	4.475** (0.011)	4.100 (0.553)	0.375 (0.129)	40	40
I	Decreasing	T1	T2	4.350** (0.033)	4.025 (0.903)	0.325 (0.212)	4.300* (0.089)	3.675** (0.062)	0.625** (0.011)	4.050 (0.767)	3.750 (0.229)	0.300 (0.260)	4.050 (0.806)	3.575** (0.048)	0.475 (0.106)	40	40
J	Decreasing	T2	T1	3.875 (0.570)	3.975 (0.915)	-0.100 (0.755)	4.575*** (0.005)	3.575** (0.033)	1.000*** (0.000)	4.825*** (0.000)	4.325 (0.102)	0.500** (0.041)	4.125 (0.499)	3.350*** (0.001)	0.775*** (0.004)	40	40
K	Increasing	T1	T2	4.225 (0.291)	3.923 (0.710)	0.301 (0.308)	4.575*** (0.000)	3.925 (0.653)	0.650*** (0.004)	4.525*** (0.003)	4.225 (0.237)	0.300 (0.237)	4.200 (0.243)	4.200 (0.253)	0.000 (1.000)	40	40
L	No Trend	T2	T1	3.350*** (0.006)	4.128 (0.548)	-0.778** (0.013)	3.400*** (0.004)	3.175*** (0.000)	0.225 (0.443)	3.125*** (0.000)	3.225*** (0.002)	-0.100 (0.759)	3.075*** (0.000)	3.075*** (0.000)	0.000 (1.000)	40	40

Table 9. Panel A. Tone Effect: OLS Analysis – Expected Return

This table reports the results of the following OLS regression:

$$y_{ij} = \alpha_i + \beta_1 D_{TONEi} + \beta_2 X_i^{Control} + \varepsilon_{ij},$$

where y_{ij} is the expected return of stock i by subject j as a dependent variable, D_{TONEi} is a tone effect dummy variable that takes a value of 1 if stock i is accompanied by positive tone news and 0 if stock i is accompanied by negative tone news; $X_i^{Control}$ is a set of control variables such as *Increasing_i*, which is a dummy variable that takes a value of 1 if stock i is classified as the increasing stock, 0 otherwise; *Decreasing_i* is a dummy variable that takes a value of 1 if stock i is classified as decreasing, 0 otherwise; *Simple_i* is a dummy variable that takes a value of 1 if a news story for stock i is classified as simple and 0 for news stories that are classified as complex; *First_B_j* to *First_L_j* are dummy variables that take a value of 1 if the experiment begins with stock B to L, respectively, for subject j , 0 otherwise. Additional control variables are subject j 's ratings for *Confidence_{ij}*, *Potential_{ij}*, *Safety_{ij}*, and *Sentiment_{ij}* for stock i . Interaction terms *Tone_i×Simple_i*, *Tone_i×Inc_i*, and *Tone_i×Dec_i* capture interactions between the positive tone and simple news, the positive tone and the increasing stocks and the positive tone and the decreasing stocks, respectively. p -values are reported in parentheses. The OLS regression is estimated by using the Newey-West procedure to control for autocorrelation and heteroskedasticity in error terms. Statistical significance is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level, respectively.

	(1)	(2)	(3)	(4)	(5)
Constant _i	-0.011*** (0.000)	-0.018*** (0.000)	-0.094*** (0.000)	-0.098*** (0.000)	-0.105*** (0.000)
Tone _i	0.018*** (0.000)	0.018*** (0.000)	0.011*** (0.002)	0.011*** (0.002)	0.024** (0.012)
Tone _i ×Simple _i					-0.012* (0.083)
Tone _i ×Inc _i					-0.016* (0.059)
Tone _i ×Dec _i					-0.004 (0.628)
Increasing _i		0.016*** (0.000)	0.002 (0.508)	0.002 (0.508)	0.011 (0.115)
Decreasing _i		0.003 (0.580)	0.002 (0.611)	0.002 (0.616)	0.005 (0.507)
Simple _i			0.009** (0.035)	0.009** (0.036)	0.015*** (0.006)
Confidence _{ij}			-0.003*** (0.005)	-0.004*** (0.004)	-0.003*** (0.006)
Potential _{ij}			0.013*** (0.000)	0.013*** (0.000)	0.013*** (0.000)
Safety _{ij}			0.004** (0.016)	0.004** (0.018)	0.004** (0.020)
Sentiment _{ij}			0.004** (0.047)	0.004** (0.048)	0.004** (0.048)
First_B _j				-0.003 (0.593)	-0.003 (0.631)
First_C _j				0.005 (0.491)	0.005 (0.485)
First_D _j				0.002 (0.710)	0.002 (0.705)
First_E _j				0.010 (0.261)	0.010 (0.255)
First_F _j				0.002 (0.726)	0.002 (0.675)
First_G _j				-0.008 (0.521)	-0.008 (0.520)
First_H _j				0.005 (0.535)	0.005 (0.528)
First_I _j				0.005 (0.414)	0.006 (0.372)
First_J _j				0.007 (0.369)	0.008 (0.336)
First_K _j				0.001 (0.788)	0.002 (0.778)
First_L _j				0.016 (0.182)	0.016 (0.177)
Adj. R ²	0.020	0.032	0.166	0.165	0.168
F-Stat.	21.266***	11.628***	24.751***	10.902***	9.732***
OBS	960	960	960	960	960

Table 9. Panel B. Tone Effect: OLS Analysis – Expected Volatility

This table reports the results of the following OLS regression:

$$y_{ij} = \alpha_i + \beta_1 D_{TONEi} + \beta_2 X_i^{Control} + \varepsilon_{ij},$$

where y_{ij} is expected volatility for stock i by subject j as a dependent variable, which is estimated by using the approach by Ben-David, Graham, and Harvey (2013). D_{TONEi} is a tone effect dummy variable that takes a value of 1 if stock i is accompanied by positive tone news and 0 if it is accompanied by negative tone news; $X_i^{Control}$ is a set of control variables such as $Increasing_i$, which is a dummy variable that takes a value of 1 if stock i is classified as the increasing stock, 0 otherwise; $Decreasing_i$ is a dummy variable that takes a value of 1 if stock i is classified as decreasing, 0 otherwise; $Simple_i$ is a dummy variable that takes a value of 1 if a news story for stock i is classified as simple and 0 if it is classified as complex; $First_B_j$ to $First_L_j$ are dummy variables that take a value of 1 if the experiment begins with stock B to L, respectively, for subject j , 0 otherwise. Additional control variables are subject j 's ratings for $Confidence_{ij}$, $Potential_{ij}$, $Safety_{ij}$, and $Sentiment_{ij}$ for stock i . Interaction terms $Tone_i \times Simple_i$, $Tone_i \times Inc_i$, and $Tone_i \times Dec_i$ capture interactions between the positive tone and simple news, the positive tone and the increasing stocks, and the positive tone and the decreasing stocks, respectively. p -values are reported in parentheses. We estimate the OLS regression by using the Newey-West procedure to control for autocorrelation and heteroskedasticity in error terms. Statistical significance is denoted by asterisks *, **, and *** for a 10%, 5%, and 1% significance level, respectively.

	(1)	(2)	(3)	(4)	(5)
Constant	0.051*** (0.000)	0.055*** (0.000)	0.070*** (0.000)	0.069*** (0.000)	0.068*** (0.000)
Tone _i	-0.000 (0.953)	-0.000 (0.956)	0.001 (0.727)	0.000 (0.745)	0.002 (0.708)
Tone _i ×Simple _i					0.002 (0.762)
Tone _i ×Inc _i					-0.002 (0.750)
Tone _i ×Dec _i					-0.004 (0.553)
Increasing _i		-0.019*** (0.000)	-0.017*** (0.000)	-0.017*** (0.000)	-0.016*** (0.001)
Decreasing _i		0.006 (0.153)	0.006 (0.158)	0.006 (0.141)	0.009 (0.128)
Simple _i			-0.001 (0.643)	-0.001 (0.644)	-0.002 (0.591)
Confidence _{ij}			0.000 (0.930)	-0.000 (0.777)	-0.000 (0.759)
Potential _{ij}			0.001 (0.469)	0.001 (0.439)	0.001 (0.431)
Riskiness _{ij}			-0.006*** (0.005)	-0.005*** (0.005)	-0.005*** (0.006)
Sentiment _{ij}			0.000 (0.958)	0.000 (0.989)	0.000 (0.999)
First_B _j				-0.020* (0.058)	-0.020* (0.058)
First_C _j				-0.017 (0.129)	-0.017 (0.130)
First_D _j				0.012 (0.316)	0.012 (0.315)
First_E _j				0.000 (0.950)	0.000 (0.951)
First_F _j				-0.007 (0.553)	-0.007 (0.553)
First_G _j				0.017 (0.432)	0.017 (0.432)
First_H _j				0.020 (0.357)	0.020 (0.357)
First_I _j				-0.010 (0.362)	-0.010 (0.361)
First_J _j				0.030 (0.117)	0.030 (0.119)
First_K _j				-0.010 (0.352)	-0.010 (0.352)
First_L _j				0.002 (0.782)	0.002 (0.783)
Adj. R ²	-0.001	0.034	0.043	0.096	0.094
F-Stat.	0.001	12.385***	6.355***	6.340***	5.478***
OBS	957	957	949	949	949

Table 10. Tone Effect – Investor Actions

This table presents the proportion of subjects that choose to buy, sell, or continue to hold their hypothetically own stocks after reading positive or negative tone news. We ask subjects the following question: “Suppose that you currently hold shares of stock i . Would you buy additional shares, sell your shares, or hold your shares now?” *Positive* reports the proportion of subjects that choose to buy, sell, or hold their shares after reading positive tone news. *Negative* reports the proportion of subjects that choose to buy, sell, or hold their shares after reading negative tone news. We compare the proportions of buy, sell, and hold for all stocks and for each performance group such as *Increasing*, *Decreasing*, and *No Trend*. We test for the significant difference in fractions by using a z -test. p -values are reported in parentheses. Statistical significance is denoted by asterisks *, **, and *** at a 10%, 5%, and 1% significance level, respectively.

	Buy	Sell	Hold	OBS
<i>All Stocks</i>				
Positive	0.313	0.256	0.431	473
Negative	0.189	0.362	0.448	475
Diff.	0.123** (0.036)	-0.106* (0.054)	-0.017 (0.724)	
<i>Increasing</i>				
Positive	0.361	0.203	0.437	158
Negative	0.224	0.308	0.468	156
Diff.	0.136 (0.169)	-0.105 (0.296)	-0.031 (0.708)	
<i>Decreasing</i>				
Positive	0.288	0.288	0.423	156
Negative	0.182	0.459	0.358	159
Diff.	0.106 (0.301)	-0.170* (0.065)	0.064 (0.464)	
<i>No Trend</i>				
Positive	0.289	0.277	0.434	159
Negative	0.163	0.319	0.519	160
Diff.	0.126 (0.313)	-0.042* (0.070)	-0.084 (0.427)	

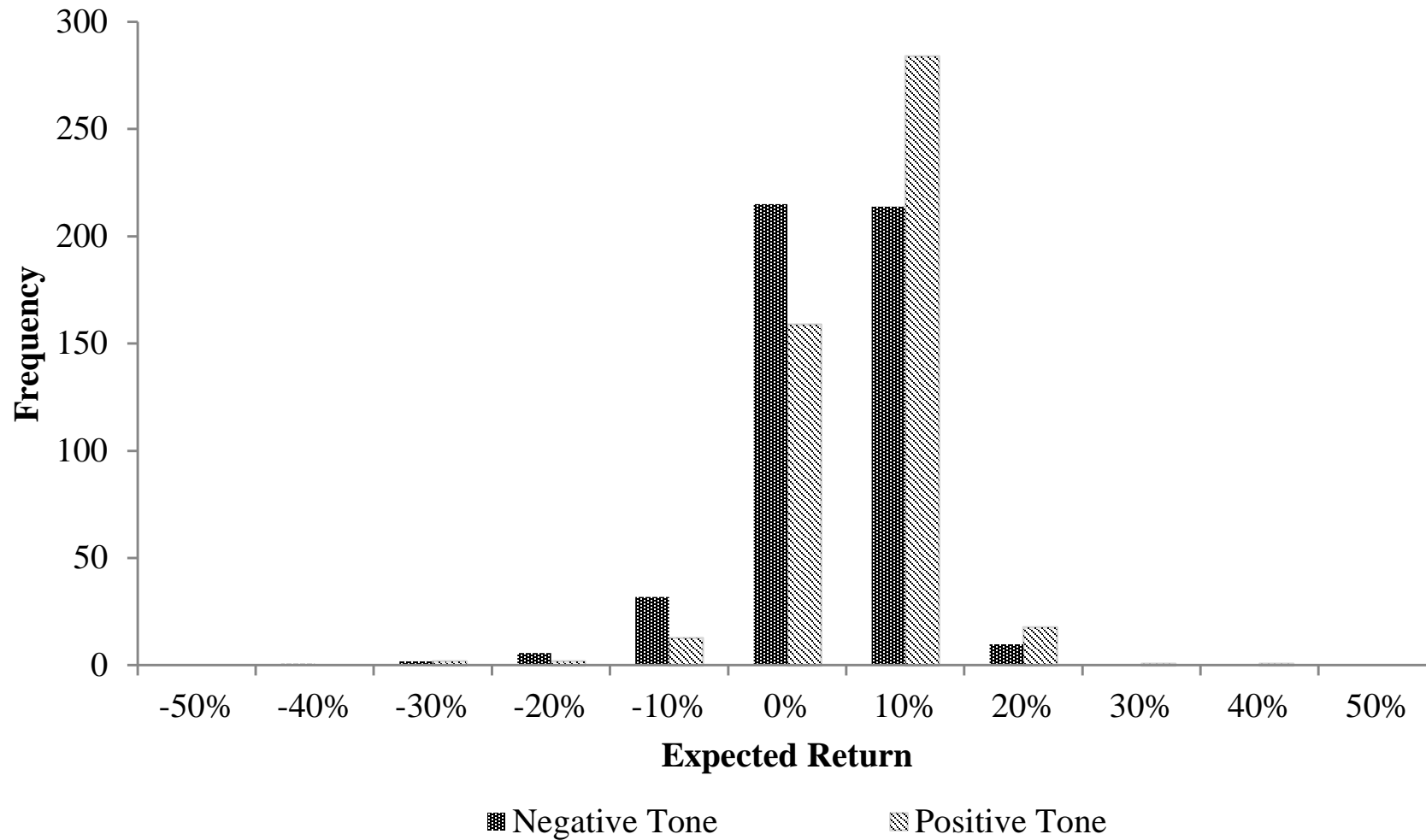


Figure 1. Expected Return Distribution

This figure shows the histogram of the expected return distribution for different tone conditions. The expected return is calculated by taking the log difference between the predicted and the current price of each stock. We pool data for stocks that are accompanied by positive (negative) tone news in Treatment 1 with the data for stocks that are accompanied by positive (negative) tone news in Treatment 2. Stocks that are accompanied by positive (negative) tone news in Treatment 1 are A, C, D, G, I, and K (B, E, F, H, J, and L) and B, E, F, H, J, and L (A, C, D, G, I, and K) in Treatment 2.

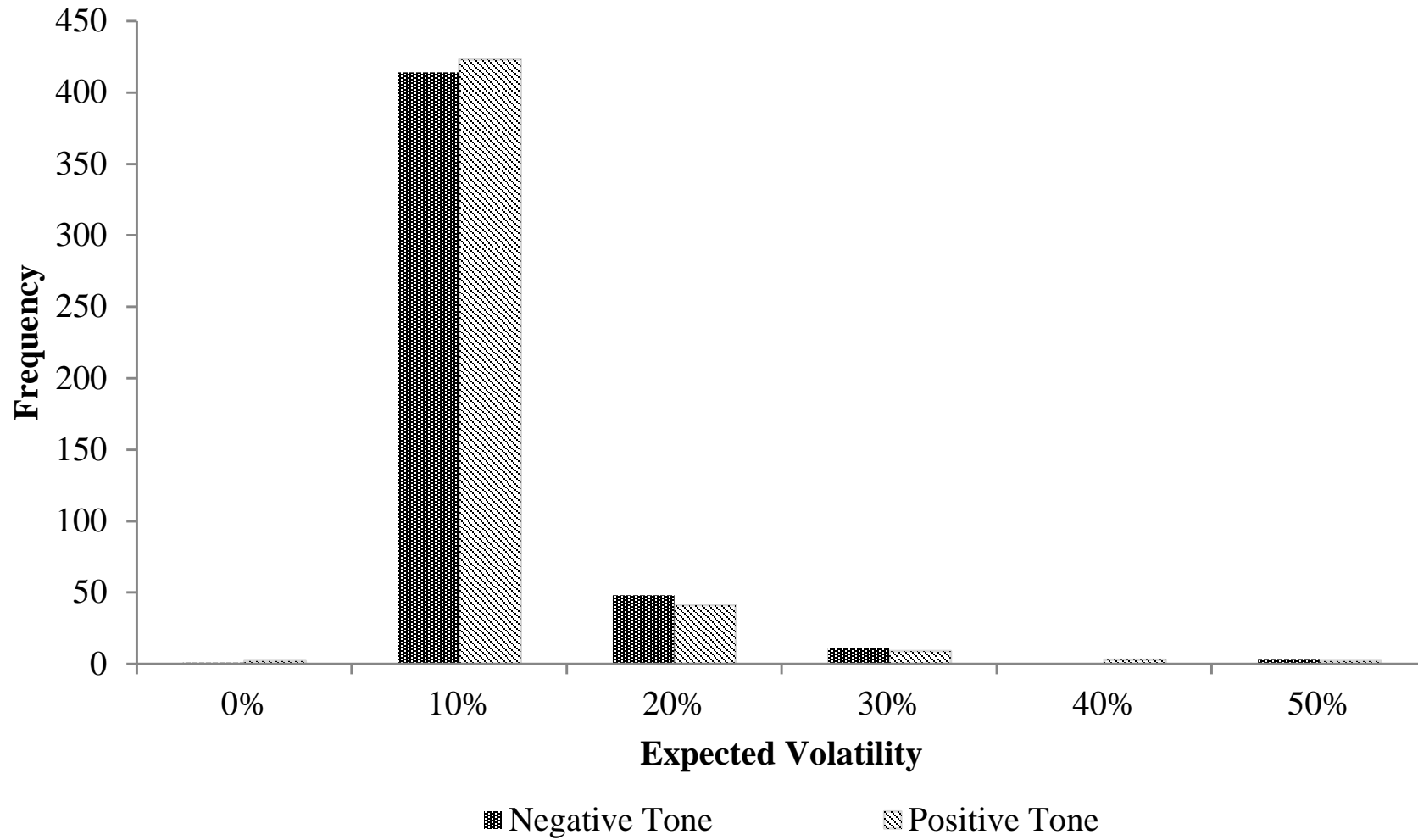


Figure 2. Expected Volatility Distribution

This figure shows the histogram of expected volatility of positive and negative tone conditions. Expected volatility is calculated by following the approach by Ben-David, Graham, and Harvey (2013):

$$VOLA_{ij}^{EXP} = (\text{LN}(P_{ij}^{Upper} / P_i^{Current}) - \text{LN}(P_{ij}^{Lower} / P_i^{Current})) / 2.65,$$

which estimates expected volatility at a 90% confidence interval. We pool data for stocks that are accompanied by positive (negative) tone news in Treatment 1 with the data for stocks that are accompanied by positive (negative) tone news in Treatment 2. Stocks that are accompanied by positive (negative) tone news in Treatment 1 are A, C, D, G, I, and K (B, E, F, H, J, and L) and B, E, F, H, J, and L (A, C, D, G, I, and K) in Treatment 2.

Appendix A. Questionnaire

In this Appendix we present a cover sheet of the experiment with instructions, a list of questions that subjects were asked for each stock, and a list of additional questions that subjects answered at the end of the experiment.

Price Expectations: An Experimental Study

Dear students,

Thank you for participating in this experimental study. This study investigates expectations of future stock prices. During the experiment you will be presented with past time series of 12 stocks of real listed companies for 50 monthly trading periods. You are asked to predict the price of each stock in the next trading period. The data is taken for 50 arbitrary consecutive months between 1990 and 2010. You will be also asked to read an extract from a real newspaper article that was published on the last month of the corresponding stock. Please read these extracts before answering questions. When providing your estimates, please imagine that you are making predictions about the future rather than trying to guess the price in the past.

You are rewarded for your participation. The reward consists of two parts: a fixed show-up fee of 10 euro that you will receive upon the completion of the survey and a variable fee that depends on your answers. You get 2 euro for each price that falls within 1% range of the actual next trading period price, 1.5 euro for each price that falls within 5% range of the actual next trading period price, and 1 euro for each price that falls within 10% range of the actual next trading period price. You earn nothing if your predicted price falls outside of these ranges.

The experiment is anonymous. It will take approximately one hour. Please do not interact with other subjects during the experiment.

Thank you!

You may proceed to the experiment

1. What is your best prediction of stock i 's price in the next trading period? If you think the stock price will remain the same, write down the exact current price.

2. What is your best guess of the upper and the lower bound the price stock i can reach in the next trading period?

3. Please rate on a seven-point scale how confident you are about your prediction of the next trading period price where 1 is not confident at all and 7 is extremely confident.

1 2 3 4 5 6 7

4. Suppose that you currently hold shares of stock i . Would you buy additional shares, sell your shares, or hold your shares now? Please choose one of the following:

1. Buy
2. Sell
3. Hold

5. Please rate on a seven-point scale how do you feel about future potential of stock i where 1 is extremely pessimistic and 7 is extremely optimistic.

1 2 3 4 5 6 7

6. How would you describe your sentiment about economic prospects? Please rate on a seven-point scale your sentiment where 1 is extremely negative and 7 is extremely positive.

1 2 3 4 5 6 7

7. How would you assess the riskiness of the stock market? Please rate on a seven-point scale the riskiness where 1 is extremely risky and 7 is extremely safe.

1 2 3 4 5 6 7

Please answer some additional questions below:

1. What is your age?

2. What is your gender?

3. What is your educational background?

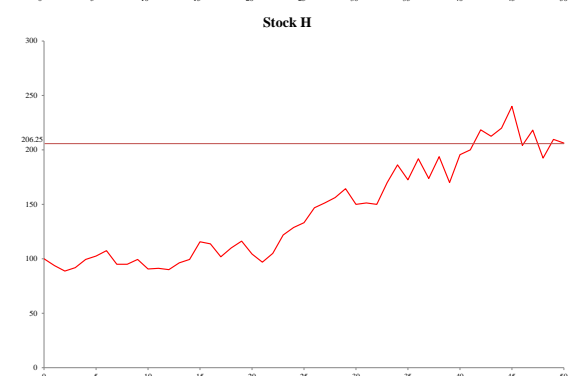
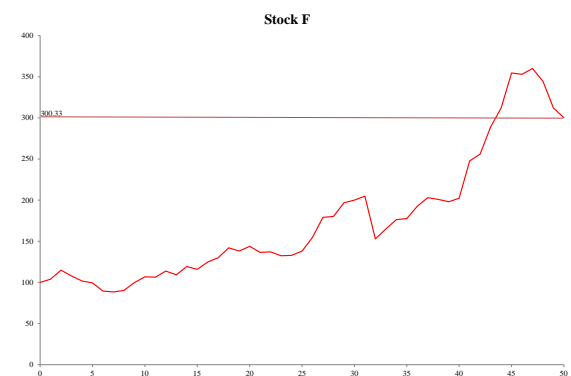
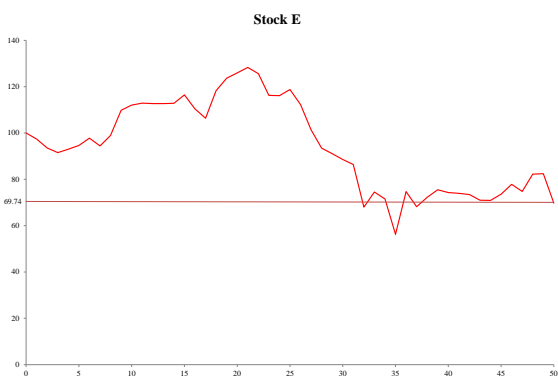
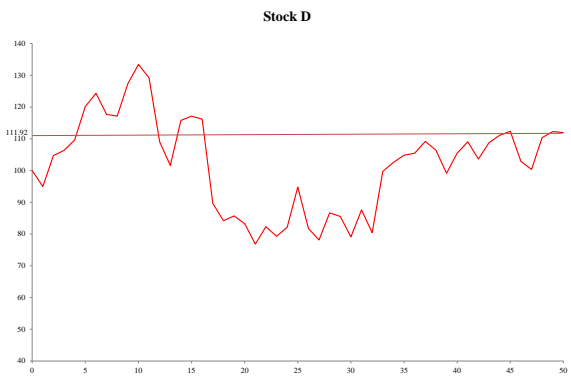
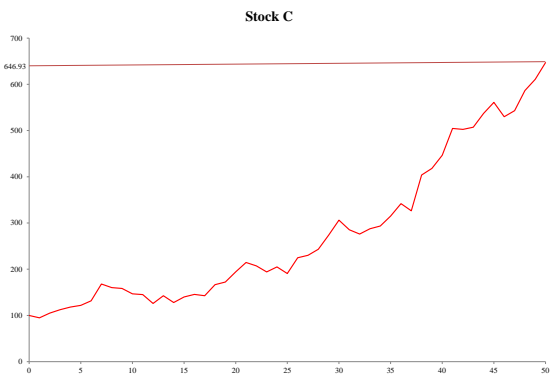
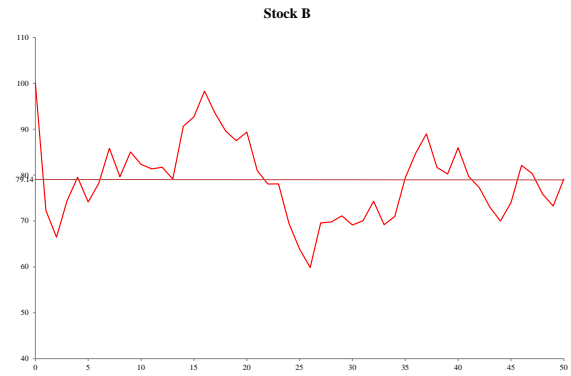
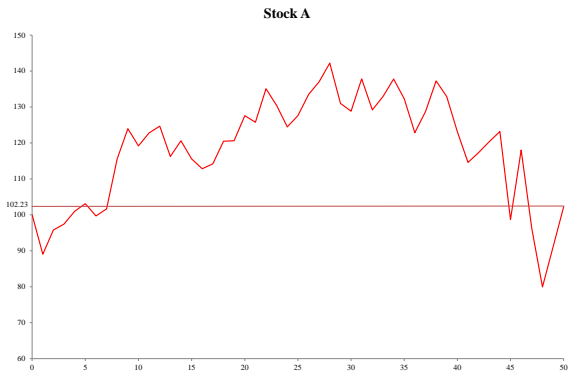
4. Do you/ your parents/ friends have any experience in stock market investing?

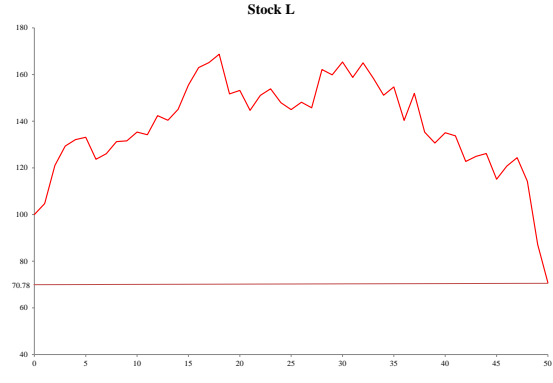
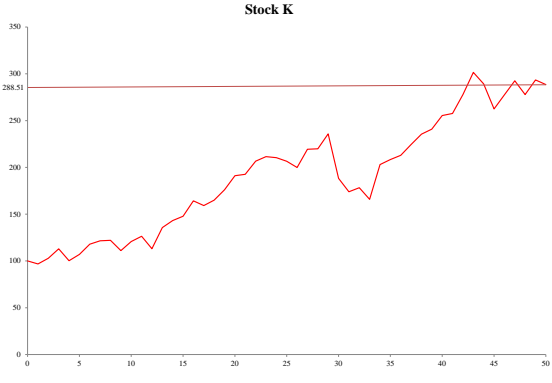
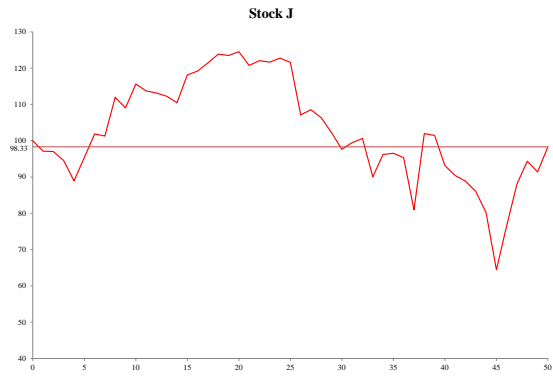
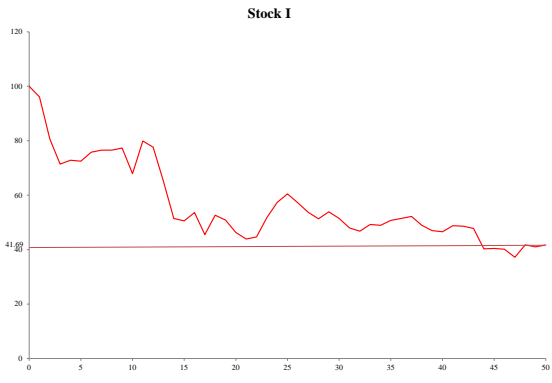
5. Are you familiar with financial concepts?

6. How frequently do you follow economic news?

Appendix B. Graphs of Selected S&P Stocks

This appendix presents the graphs of historical stock prices of the real U.S. companies listed on the S&P 500 index that subjects in both treatment groups observed during the experiment.





Appendix C. News Extracts

In this appendix we present news extracts that subjects were asked to read. Positive tone news extracts are on the left and negative tone news extracts are on the right. We mark the modifier words in *italics*. During the experiment subjects observed the text in the standard font. We also report the stock to which the news extract corresponds, the complexity of news, and the treatment group, which received each extract.

Positive Tone News	Negative Tone News
<p>Stock A T1 Simple: Investors See the Market's Clouds Parting as European Equities Shrug Off Weak German Data European equities managed <i>substantial</i> gains yesterday with pharmaceutical companies helping to offset earlier losses which came amid <i>slightly</i> weaker than expected data from the German business sector. Having initially lost ground, the pan-European FTSE Eurofirst 300 rose by a <i>substantial</i> 0.2 per cent to 857.71. The index of the top European shares has risen by a <i>staggering</i> 32 per cent since a trough in early March, but <i>slightly</i> worse than forecast. Readings from Germany's Ifo business climate index came yesterday in at 84.2, <i>just</i> below the forecast of 85.0. "The Ifo number <i>broadly</i> confirms the picture of improvement in business confidence and that the worst is behind us in terms of very negative growth rates," analysts at Danske Bank said. "The number still points to a decline in production, however."</p>	<p>Stock A T2 Simple: Investors See the Market's Clouds Parting as European Equities Shrug Off Weak German Data European equities managed <i>meager</i> gains yesterday with pharmaceutical companies helping to offset earlier losses which came amid <i>dramatically</i> weaker than expected data from the German business sector. Having initially lost ground, the pan-European FTSE Eurofirst 300 rose by a <i>minuscule</i> 0.2 per cent to 857.71. The index of the top European shares has risen by an <i>ordinary</i> 32 per cent since a <i>devastating</i> trough in early March, but <i>substantially</i> worse than forecast. Readings from Germany's Ifo business climate index yesterday came in at 84.2, <i>significantly</i> below the forecast of 85.0. "The Ifo number <i>barely</i> confirms the picture of improvement in business confidence and that the worst is behind us in terms of very negative growth rates," analysts at Danske Bank said. "The number still points to a decline in production, however."</p>
<p>Stock B T2 Complex Reports Increase Optimism on Wall Street as US growth figures <i>substantially</i> ease pressure on equities Fresh signs of the resilience of the US economy offered <i>substantial</i> support to global equity markets and the dollar this week, offsetting a rally for oil prices. But investors remained <i>slightly</i> concerned about the outlook outside the US and continued to display <i>some</i> nervousness about the health of the financial system. US second-quarter GDP growth was revised up <i>sharply</i>, largely because of <i>impressively</i> strong exports, although analysts warned that the outlook for domestic consumption was <i>somewhat</i> fragile - particularly given the fading impact of recent US tax rebates. European stocks moved <i>substantially</i> higher over the week. The FTSE Eurofirst 300 index gained an <i>impressive</i> 1.6 per cent and 1.2 per cent over the month – its other second monthly gain this year. Data showed that personal spending growth in real terms fell <i>insignificantly</i> by 0.4 per cent in July. In Europe, the German Ifo business climate index fell <i>slightly</i> while eurozone economic sentiment continued to decline last month.</p>	<p>Stock B T1 Complex Reports Increase Optimism on Wall Street as US growth figures <i>slightly</i> ease pressure on equities Fresh signs of the resilience of the US economy offered <i>slight</i> support to global equity markets and the dollar this week, offsetting a rally for oil prices. But investors remained <i>significantly</i> concerned about the outlook outside the US and continued to display <i>acute</i> nervousness about the health of the financial system. US second-quarter GDP growth was revised up <i>slightly</i>, largely because of <i>anticipated</i> strong exports, although analysts warned that the outlook for domestic consumption was <i>acutely</i> fragile - particularly given the fading impact of recent US tax rebates. European stocks moved <i>modestly</i> higher over the week. The FTSE Eurofirst 300 index gained an <i>unsatisfactory</i> 1.6 per cent and 1.2 per cent over the month – its only second monthly gain this year. Data showed that personal spending growth in real terms fell <i>significantly</i> by 0.4 per cent in July. In Europe, the German Ifo business climate index fell <i>dramatically</i> while eurozone economic sentiment continued to decline last month.</p>
<p>Stock C T1 Simple House prices expected to stand <i>surely</i> firm in year ahead but show <i>faint</i> signs of slowing House prices are unlikely to fall sharply next year, but will again fail to match an <i>impressive</i> growth in average earnings, according to the most prominent property market forecasters. The two lenders that produce house price indices - Halifax and Nationwide - expect growth of a <i>substantial</i> 3 per cent next</p>	<p>Stock C T2 Simple House prices expected to stand <i>unjustifiably</i> firm in year ahead but show <i>visible</i> signs of slowing House prices are unlikely to fall sharply next year, and will again fail to match a <i>modest</i> growth in average earnings, according to the most prominent property market forecasters. The two lenders that produce house price indices - Halifax and Nationwide - expect growth of an <i>unsubstantial</i> 3 per cent</p>

year; the consensus among independent economists is that earnings will grow by a *remarkable* 4 to 4.5 per cent.

The rise in house prices has slowed a *little* this year, falling behind the average growth in earnings for the first time in 10 years. On Nationwide's measure, the average house price rose 12.7 per cent in the previous year, and *additional* 3 per cent in this year.

As house prices have slowed *slightly*, their ratio to average earnings has begun to fall. Nevertheless, house prices will have to be stable for years if the ratio is to come down to levels that were considered normal in the past. The Royal Institute for Chartered Surveyors estimates that house prices in the third quarter were *anticipated* 7.8 times earnings, compared with an average of 4.9 times since 1969.

Stock D T1 Simple

ECB surely upbeat on growth prospects for eurozone, but it is "set to slightly lag behind US"

Growth in the eurozone will continue to *slightly* lag behind the US this year and the European Central Bank will have no need to raise interest rates soon, the OECD has said.

In its latest twice-yearly Economic Outlook, the OECD, the Paris-based group of industrialized countries, predicted growth in its member countries of an *impressive* 1.8 per cent this year, *significantly* up from 1 per cent last year.

The *surprising* upward revision is in line with the general trend, as reflected in the latest forecasts from the International Monetary Fund.

The pattern of growth is expected to be *slightly* uneven, however, the eurozone displaying a *somewhat* weaker recovery than the US.

The OECD expects the US to grow by an *impressive* 2.5 per cent this year, while the eurozone grows by a *healthy* 1.4 per cent.

Stock E T2 Complex

Equities rebound significantly as Asia data signal growth

Global equities rallied *impressively* this week but a US retail sales report yesterday highlighted the *slight* fragility of the risk appetite among investors.

Asia showed a *remarkable* rally yesterday. Shanghai edged *significantly* higher 0.6 per cent while South Korea gained an *impressive* 0.7 per cent on the week. India dipped *slightly* by 0.3 per cent for the week in spite of rallying 0.8 per cent yesterday.

On the contrary, Japan's Nikkei 225 Average that closed the week *insignificantly* lower at 2 per cent.

Yesterday, an *unsubstantial* 1.2 per cent slide in May retail sales rather than a forecast 0.2 per cent rise focused the attention of investors on the outlook of the US economy, with the data likely to pull estimates of second-quarter growth *slightly* below 3 per cent.

In figures released earlier yesterday, UK industrial production fell *slightly* by 0.4 per cent instead of rising by 0.4 per cent. In contrast, India reported industrial production rising *substantially* by 17.6 per cent year-on-year in April, up from a *notable* 13.9 per cent in March.

That came after China's exports in May rose by *staggering* 48.5 per cent year-on-year while other data this week showed hefty bank lending and high money supply growth presenting a *slightly* worrying inflation picture for some investors.

Stock F T2 Complex

Shares Rally for Second Straight Session, But Investors Put on the Defensive

Wall Street rallied for a second consecutive session yesterday, but remained on the defensive at mid-afternoon as investors digested *somewhat* weak economic data, a *slight* rise

next year; the consensus among independent economists is that earnings will grow by a *regular* 4 to 4.5 per cent.

The rise in house prices has slowed *sharply* this year, falling behind the average growth in earnings for the first time in 10 years. On Nationwide's measure, the average house price rose 12.7 per cent in the previous year, but *just* 3 per cent in this year.

As house prices have slowed *sharply*, their ratio to average earnings has begun to fall. Nevertheless, house prices will have to be stable for years if the ratio is to come down to levels that were considered normal in the past. The Royal Institute for Chartered Surveyors estimates that house prices in the third quarter were *alarming* 7.8 times earnings, compared with an average of 4.9 times since 1969.

Stock D T2 Simple

ECB unjustifiably upbeat on growth prospects for eurozone, but it is "set to significantly lag behind US"

Growth in the eurozone will continue to *significantly* lag behind the US this year and the European Central Bank will have no need to raise interest rates soon, the OECD has said.

In its latest twice-yearly Economic Outlook, the OECD, the Paris-based group of industrialized countries, predicted growth in its member countries of a *mediocre* 1.8 per cent this year, *slightly* up from 1 per cent last year.

The *anticipated* upward revision is in line with the general trend, as reflected in the latest forecasts from the International Monetary Fund.

The pattern of growth is expected to be *particularly* uneven, however, with the eurozone displaying a *much* weaker recovery than the US.

The OECD expects the US to grow by a *regular* 2.5 per cent this year, while the eurozone grows by a *mediocre* 1.4 per cent.

Stock E T1 Complex

Equities rebound slightly as Asia data signal growth

Global equities rallied *modestly* this week but a lackluster US retail sales report yesterday highlighted the *acute* fragility of risk appetite among investors.

Asia showed a *modest* rally yesterday. Shanghai edged *slightly* higher 0.6 per cent while South Korea gained a *tiny* 0.7 per cent on the week. India dipped *unexpectedly* by 0.3 per cent for the week in spite of rallying 0.8 per cent yesterday.

On the contrary, Japan's Nikkei 225 Average that closed the week *significantly* lower at 2 per cent.

Yesterday, a *dramatic* 1.2 per cent slide in May retail sales rather than a forecast 0.2 per cent rise focused the attention of investors on the outlook of the US economy, with the data likely to pull estimates of second-quarter growth *significantly* below 3 per cent.

In figures released earlier yesterday, UK industrial production fell *unexpectedly* by 0.4 per cent instead of rising by 0.4 per cent. In contrast, India reported industrial production rising *predictably* by 17.6 per cent year-on-year in April, up from a *disappointing* 13.9 per cent in March.

That came after China's exports in May rose by 48.5 per cent year-on-year while other data this week showed hefty bank lending and high money supply growth, presenting a *significantly* worrying inflation picture for some investors.

Stock F T1 Complex

Shares Rally for Second Straight Session, But Investors Put on the Defensive

Wall Street rallied for a second consecutive session yesterday, but remained on the defensive at mid-afternoon as investors digested *especially* weak economic data, a *significant*

in oil prices and remarks by Federal Reserve chairman. In his first public comments upon the economy since July, Federal Reserve chairman said activity was moderating, but core inflation was still "uncomfortably high."

His remarks kept stocks under *slight* pressure, but off their earlier lows. The S&P 500 was up *significantly* by 1.05 points, or 0.1 per cent, at 1,382.95 after reaching an *insignificant* low of 1,378.03.

Another beneficiary of the healthy economic snapshot was the dollar, which *notably* rebounded from a 20-month low against the euro but was mixed against other major currencies.

The better tone in energy prices boosted the American Stock Exchange Oil index *substantially*, which rose by 1.3 per cent.

Providing ballast was the Commerce Department's report that G.D.P. expanded at a *surprising* 2.2 percent annual rate, *substantially* above its previous estimate of 1.6 percent and economists' projections for a 1.8 percent gain.

Meanwhile, the Federal Reserve said in its beige book report on economic conditions that growth was moderate in most areas of the United States in the first few weeks of November as consumer spending grew *substantially*.

Stock G T1 Complex

Tokyo at two-month high on *significantly* weaker, but still remarkably strong yen

The continued weakening of the yen *visibly* boosted Japanese exporters and helped Tokyo shares hit a two-month high after a second consecutive day in higher territory. But Junichiro Koizumi yesterday said the yen was *somewhat* strong in relation to Japan's economic fundamentals, suggesting the prime minister is slightly nervous that a weak dollar will undermine his country's recovery.

"Credit rating agencies have downgraded Japanese government bonds to below those of Botswana. Yet why doesn't the Japanese yen depreciate?"

The yen *promisingly* slipped in Tokyo trade yesterday as the dollar rose to Y118.9 from Y117.2, having started the week at Y116.8.

The Nikkei 225 Average *substantially* rose by 1.7 per cent to 8,375.36, having gained *significantly* more than 1 per cent in the previous session. The broader-based Topix index gained a *satisfactory* 1.4 per cent to 834.12.

Toshiba leapt an *impressive* 6.4 per cent to Y350 and Matsushita rose *significantly* by 4.7 per cent to Y1,080.

Sony shares rose *substantially* by 3.3 per cent to Y3,100 the day after the company said it would launch an integrated audio-video machine, the PSX, and a new personal digital assistant this year.

The announcement helped investors banish the memory of Sony's April results, when the company said it made a *modest* loss in the three months to March and fell *slightly* short of analysts' full-year earnings forecasts.

Namco, another gamemaker, gained a *substantial* 2.7 per cent to Y1,700 after JP Morgan raised its rating on the company. The change followed Namco's announcement on Wednesday that it would raise its dividend for the year to March to Y10 from Y5.

Meanwhile, investors shrugged off data that shows industrial output fell *slightly* by 1.2 per cent in April, the first drop in two months, which might reinforce the impression that the Japanese economy is heading from a *substantial* growth back to recession.

Stock H T2 Simple

Microsoft Beats Earnings Expectations but Warns Growth is *Slightly* Slowing

Microsoft attempted yesterday to temper expectations for its sales growth over the next few quarters, and reported

rise in oil prices and remarks by Federal Reserve chairman. In his first public comments upon the economy since July, Federal Reserve chairman said activity was moderating, but core inflation was still "uncomfortably high."

His remarks kept stocks under *significant* pressure, but off their earlier lows. The S&P 500 was up *meagerly* by 1.05 points, or 0.1 per cent, at 1,382.95 after reaching a *drastic* low of 1,378.03.

Another beneficiary of the healthy economic snapshot was the dollar, which *slightly* rebounded from a 20-month low against the euro but was mixed against other major currencies.

The better tone in energy prices boosted the American Stock Exchange Oil index *slightly*, which rose by 1.3 per cent.

Providing ballast was the Commerce Department's report that G.D.P. expanded at a *modest* 2.2 percent annual rate, *slightly* above its previous estimate of 1.6 percent and economists' projections for a 1.8 percent gain.

Meanwhile, the Federal Reserve said in its beige book report on economic conditions that growth was moderate in most areas of the United States in the first few weeks of November as consumer spending grew *somewhat*.

Stock G T2 Complex

Tokyo at two-month high on *somewhat* weaker, but still unjustifiably strong yen

The continued weakening of the yen *slightly* boosted Japanese exporters and helped Tokyo shares hit a two-month high after a second consecutive day in higher territory. But Junichiro Koizumi yesterday said the yen was *unjustifiably* strong in relation to Japan's economic fundamentals, suggesting the prime minister is particularly nervous that a weak dollar will undermine his country's *fragile* recovery.

"Credit rating agencies have downgraded Japanese government bonds to below those of Botswana. Yet why doesn't the Japanese yen depreciate?"

The yen *insufficiently* slipped in Tokyo trade yesterday as the dollar rose to Y118.9 from Y117.2, having started the week at Y116.8.

The Nikkei 225 Average *inadequately* rose by 1.7 per cent to 8,375.36, having gained *just* a bit more than 1 per cent in the previous session. The broader-based Topix index gained an *insignificant* 1.4 per cent to 834.12.

Toshiba leapt a *mediocre* 6.4 per cent to Y350 and Matsushita rose *insignificantly* by 4.7 per cent to Y1,080.

Sony shares rose *slightly* by 3.3 per cent to Y3,100 the day after the company said it would launch an integrated audio-video machine, the PSX, and a new personal digital assistant this year.

The announcement helped investors banish the memory of Sony's April results, when the company said it made a *dramatic* loss in the three months to March and fell *significantly* short of analysts' full-year earnings forecasts.

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Meanwhile, investors shrugged off data that shows industrial output fell *sharply* by 1.2 per cent in April, the first drop in two months, which might reinforces the impression that the Japanese economy is heading from a *negligible* growth back to recession.

Stock H T1 Simple

Microsoft Beats Earnings Expectations but Warns Growth is *Sharply* Slowing

Microsoft attempted yesterday to temper expectations for its sales growth over the next few quarters, despite reporting

significantly higher than expected earnings for its third fiscal quarter after the close of New York trading.

Revenue growth for the third quarter, ended March 31, was at the lowest level since 1996, said Greg Maffei, chief financial officer.

Microsoft said revenues for the latest quarter were *massive* \$ 3.77bn, a *sizable* 18 per cent increase over \$ 3.21bn in the same quarter last year. Net income for the third quarter was *substantial* \$ 1.33bn, up *impressive* 28 per cent from \$ 1.04bn.

That sales growth is *slightly* down from 34 percent in the immediately previous quarter. Greg Maffei, Microsoft's chief financial officer.

Earnings per share rose to 50 cents, up a *significant* 25 per cent from 40 cents a share in the same period last year.

"We are gratified that the quarter's results confirm that consumer demand remains strong for Microsoft's products," said Mr Maffei. "But it is critical to note that our growth has slowed *somewhat* for each of the last four quarters, we are likely to experience slower growth for the balance of calendar XXXX."

Stock I T1 Simple

House price growth still *remarkably* strong, but show *faint* signs of slowing

House prices increased by an *impressive* 22 per cent in England and Wales last year but there were *mild* signs of the rise slowing in the final quarter as London prices *slightly* fell, according to official figures published today by the Land Registry.

The average cost of a home rose to *skyrocketing* Pounds 145,251, a 22 per cent increase, *slightly* lower than the 25 per cent reported by Nationwide and Halifax's 26 per cent over the same period.

The east Midlands and south-west had the fastest growth with prices rising by an *astonishing* 28 per cent or more while greater London prices grew the slowest at 18.8 per cent.

The average home in the capital dropped in value *faintly* from Pounds 248,609 to end the year at Pounds 241,838.

Knight Frank, the estate agent, said prices for prime London property had fallen *somewhat* by 1.4 per cent in the second half of last year, having risen by a *massive* 6.2 per cent in the first half. This took the total rise for the year to a *healthy* 4.7 per cent, *slightly* down from 12.6 per cent in the previous year.

Stock J T2 Simple

Ranks of unemployed likely to swell further

Non-farm payrolls, the headline US employment indicator, is released on Friday. Analysts expect a *significant* improvement on July's *mild* loss of 247,000 jobs, with the consensus opinion being for 222,000 jobs to have been shed during August. Such an *encouraging* improvement would be the smallest loss of jobs since September XXXX, but nevertheless would push the US unemployment rate *slightly* up to 9.5 per cent from the 9.4 seen in July.

Eurozone unemployment figures are released tomorrow, and analysts predict a *slight* continuation of the rising trend. July's figure is expected to increase to *just* a 9.5 per cent from the 9.4 seen in June.

Industrial performance as measured by purchasing managers indices has been *steadily* improving this year. US ISM manufacturing, released tomorrow, is expected for the first time since January XXXX to show an expansion of the sector. Consensus opinion predicts an August figure of 50.2, which *significantly* breaches the 50 level that indicates growth in the sector.

slightly higher than expected earnings for its third fiscal quarter after the close of New York trading.

Revenue growth for the third quarter, ended March 31, was at the lowest level since 1996, said Greg Maffei, chief financial officer.

Microsoft said revenues for the latest quarter were *unsatisfactory* \$ 3.77bn, a *disappointing* 18 per cent increase over \$ 3.21bn in the same quarter last year. Net income for the third quarter was *just* \$ 1.33bn, up *expectable* 28 per cent from \$ 1.04bn.

That sales growth is *worryingly* down from 34 percent in the immediately previous quarter. Greg Maffei, Microsoft's chief financial officer.

Earnings per share rose to 50 cents, up a *modest* 25 per cent from 40 cents a share in the same period last year.

"We are gratified that the quarter's results confirm that consumer demand remains strong for Microsoft's products," said Mr Maffei. "But it is critical to note that our growth has slowed *sharply* for each of the last four quarters, and we are likely to experience slower growth for the balance of calendar XXXX."

Stock I T2 Simple

House price growth still *unjustifiably* strong, but show *worrying* signs of slowing

House prices increased by a *modest* 22 per cent in England and Wales last year but there were *pronounced* signs of the rise slowing in the final quarter as London prices *sharply* fell, according to official figures published today by the Land Registry.

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Knight Frank, the estate agent, said prices for prime London property had fallen *sharply* by 1.4 per cent in the second half of last year, having risen by an *inadequate* 6.2 per cent in the first half. This took the total rise for the year to an *inadequate* 4.7 per cent, *significantly* down from 12.6 per cent in the previous year.

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Eurozone unemployment figures are released tomorrow, and analysts predict a *worrying* continuation of the rising trend. July's figure is expected to increase to *as much* as 9.5 per cent from the 9.4 seen in June.

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Stock K T1 Complex

Traders *largely* convinced by Fed's confidence booster

The Fed cut both the Fed funds and discount rates by a *substantial* 50 basis points, to 3 per cent and 3.5 per cent respectively. That came after last week's inter-meeting 75bp reduction in the funds rate.

Wall Street initially rallied *substantially*, but returned to a negative territory in the last hour of trade. The S&P 500 rose *significantly* by 1.7 per cent after the Fed acted, only to close *slightly* down 0.5 per cent at 1,355.81.

In the US Treasury market, the two-year yield reversed an early rise and was down *significantly* by 5bp at 2.22 per cent. Interest rate futures rallied *substantially* and priced in as much as 2.5 per cent funds rate by the end of April.

The move by the Fed yesterday followed a mixed bag of US economic releases earlier in the day.

A survey from ADP Employer Services showed that *vital* 130,000 private sector jobs were created in January, about three times the expected increase, heightening expectations that tomorrow's non-farm payrolls report could turn out to be *significantly* stronger than expected.

However, US fourth quarter gross domestic product growth came *slightly* weaker than expected. The economy expanded at a *healthy* annualized rate of 0.6 per cent in the fourth quarter of last year.

Equity markets in Europe and Asia saw relatively quiet trading as investors rate the US news.

In Asia, an early attempt to build on Tuesday's gains came to naught as *slight* uncertainty about the Fed set in. In Tokyo, the Nikkei 225 Average ended *slightly* lower by 1 per cent, while Hong Kong shed some 2.6 per cent and Seoul fell *a bit* by 3 per cent.

Stock L T2 Complex

Encouraging rally tempered *slightly* by long-term concerns

Global equities enjoyed an *encouraging* end-of-year rally yesterday, but the mood was *slightly* tempered by *occasional* concerns about the outlook for the global economy.

In Tokyo, the Nikkei 225 ended its last session of XXXX with a *promising* gain of 1.3 per cent, although its 42.1 per cent annual decline was the worst on record.

Most other Asian markets ended *sizably* higher yesterday but remained on course for full-year declines of a similar magnitude.

The FTSE Eurofirst 300 index - which will trade today - rose *significantly* by 1.7 per cent.

In New York, the S&P 500 index rose *substantially* by 2.4 per cent as investors took heart from news that Washington had widened *sizably* its bail-out for the car industry.

Preliminary figures showed that Germany's annual inflation rate slowed *significantly* for a fifth successive month in December to its lowest level for two years.

European bonds fell back, in spite of the better news on inflation, as historically low yields deterred buyers.

The Conference Board said its index of consumer confidence fell *insignificantly* from 44.7 in November to 38.0 this month.

Stock K T2 Complex

Traders *slightly* convinced by Fed's confidence booster

The Fed cut both the Fed funds and discount rates by an *unsubstantial* 50 basis points, to 3 per cent and 3.5 per cent respectively. That came after last week's inter-meeting 75bp reduction in the funds rate.

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A survey from ADP Employer Services showed that *some* 130,000 private sector jobs were created in January, about three times the expected increase, heightening expectations that tomorrow's non-farm payrolls report could turn out to be *a bit* stronger than expected.

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In Asia, an early attempt to build on Tuesday's gains came to naught as *significant* uncertainty about the Fed set in. In Tokyo, the Nikkei 225 Average ended *significantly* lower by 1 per cent, while Hong Kong shed a drastic 2.6 per cent and Seoul fell *disappointingly* by 3 per cent.

Stock L T1 Complex

Modest rally tempered *dramatically* by long-term concerns

Global equities enjoyed a *mediocre* end-of-year rally yesterday, but the mood was *strongly* tempered by *persistent* concerns about the outlook for the global economy.

In Tokyo, the Nikkei 225 ended its last session of XXXX with a gain of a *meager* 1.3 per cent, although its *shocking* 42.1 per cent annual decline was the worst on record.

Most other Asian markets ended *insignificantly* higher yesterday but remained on course for full-year *devastating* declines of a similar magnitude.

The FTSE Eurofirst 300 index - which will trade today - rose *inadequately* by 1.7 per cent.

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The Conference Board said its index of consumer confidence fell *drastically* from 44.7 in November to 38.0 this month.

Appendix D. Actual Newspaper Articles

In this Appendix we present actual newspaper articles downloaded from the *LexisNexis* database, on which we based our news extracts. In the following, we report the source, where the article was published, the date of publication, and the stock, for which we use the article. If a single newspaper article did not discuss enough distinct topics, we searched for another article that was published on the same day and discussed the same news, in order to have enough topics discussed in the news extract. We based news extracts of stocks C, F, and G on two newspaper articles in order to meet our pre-determined complexity requirements. We based news extracts of other stocks on a single newspaper article.

Stock A: European equities shrug off weak German data

Source: The New York Times

Date of Publication: May 26, 2009 Tuesday

European equities managed meagre gains yesterday with pharmaceutical companies helping to offset earlier losses which came amid weaker than expected data from the German business sector.

Having initially lost ground, the pan-European FTSE Eurofirst 300 rose 0.2 per cent to 857.71, during a session that lacked significant input from either the US or UK, both of which were closed for holidays.

The index of the top European shares has risen 32 per cent since a trough in early March, but worse than forecast readings from Germany's Ifo business climate index yesterday reminded investors that a swift recovery was unlikely in Europe's largest economy.

The index came in at 84.2, just below the forecast of 85.0.

"The Ifo number broadly confirms the picture of improvement in business confidence and that the worst is behind us in terms of very negative growth rates," analysts at Danske Bank said.

"The number still points to a decline in production, however."

The German retailer Arcandor lost 20 per cent after Karl-Gerhard Eick, the company's chief executive, used interviews with the country's press to reiterate the point that the group's survival was dependent on state aid.

Porsche fell 3.1 per cent to EUR43.98, clawing back some of the earlier losses in the session, on the news that VW had loaned the debt-ridden sports carmaker EUR700m to help with its finances. VW shares fell 0.3 per cent to EUR221.65

The declines by the German pair were mirrored by a host of companies in the sector. For example, Daimler, the world's second-largest luxury carmaker which last week brought a 10 per cent stake in the electric car pioneer Tesla Motors, slipped 0.6 per cent to EUR24.93.

Meanwhile, Renault, France's second biggest carmaker, came off by 0.8 per cent to EUR26.05. However, a rally among pharmaceutical companies led by Sanofi-Aventis, one of the world's largest drugmakers, helped pull the market back into the black by the close.

Sanofi climbed 1.58 per cent to EUR44.57 after the French group received an order worth \$190m from the US Department of Health and Human Services to make swine flu vaccines.

Japanese shares led Asia-Pacific higher thanks to gains by steelmakers, with the broader market soon recovering from declines following North Korea's nuclear and short-range missile tests.

South Korea's Kospi, which dropped as much as 6.3 per cent, recouped losses to close just 0.2 per cent lower at 1,400.90.

Samsung Electronics dropped as much as 5.5 per cent to Won520,000 before closing down just 0.9 per cent at Won545,000.

Shinhan Financial lost 1.9 per cent to Won 31,600 and Korea Exchange Bank fell 3 per cent to Won8,630.

The FTSE Asia-Pacific index gained 0.1 per cent to 188.51. The Nikkei 225 gained 1.3 per cent to 9,347.00, while the broader Topix rose 0.8 per cent to 883.00.

Steelmakers were in focus, with Nippon Steel rising 2.7 per cent to Y348. Investors expressed relief following a local report that Toyota would not push the steelmaker for further price reductions in negotiations.

Other steelmakers also gained momentum from the report, with JFE Holdings gaining 3.7 per cent to Y2,970 and Kobe Steel rising 4.4 per cent to Y166.

Daiwabo, a company that manufactures protective face masks, dropped 13.5 per cent to S\$289, amid signs that Tokyo's concerns over the outbreak of swine flu were easing.

In Hong Kong, the Hang Seng gained 0.4 per cent to 17,121.82.

Property stocks were higher after a local report said that home resales were improving.

Cheung Kong shares gained 7 per cent to HK\$88.80, while Sun Hung Kai Properties gained 5.8 per cent to HK\$90.90.

The major commodities markets in London, Chicago and New York were closed.

However, there was electronic trading of crude oil, and the Nymex July West Texas Intermediate contract lost 49 cents to \$61.18.

Trading was light in currencies markets. By late European trade, the dollar was flat against the yen at Y94.80 and was up 0.2 per cent against the euro at \$1.4006.

Stock B: US growth figures ease pressure on equities

Source: Financial Times (London, England)

Date of Publication: August 30, 2008 Saturday

Fresh signs of the resilience of the US economy offered support to global equity markets and the dollar this week, offsetting a rally for oil prices.

But investors remained concerned about the outlook outside the US and continued to display acute nervousness about the health of the financial system.

US second-quarter GDP growth was revised up sharply, largely because of strong exports, although analysts warned that the outlook for domestic consumption was more fragile - particularly given the fading impact of recent US tax rebates.

That view was underlined yesterday as data showed that personal spending growth in real terms fell 0.4 per cent in July.

"Overall, there are a lot of negatives for consumption right now and precious few positives," said Paul Ashworth, senior US economist at Capital Economics.

"With consumption falling we suspect that the overall economy will contract too, even after allowing for the strength of exports."

Meanwhile, data releases elsewhere heightened the sense of gloom about the global economic outlook. In Europe, the German Ifo business climate index fell to its lowest for three years in August while eurozone economic sentiment also continued to decline last month.

However, any hopes among investors for a cut in interest rates to stimulate growth appeared to be quashed by a welter of hawkish comments by European Central Bank officials.

These came in spite of data that some analysts believed signalled a peak in eurozone inflation.

"Inflation has started to slow, but remains too high for the ECB to soften its rhetoric," said Marco Valli, economist at UniCredit, although he added: "With growth weakness bound to persist throughout next year, rate cuts should be delivered, starting from the end of the second quarter next year."

This week's UK economic releases were consistently miserable and drove sterling to a 12-year low on a trade-weighted basis - even though analysts said a cut in interest rates remained unlikely before the end of the year.

And there was little for Japanese investors to cheer from a string of economic releases yesterday, even as the government announced a modest economic stimulus package. Michael Taylor at Lombard Street Research said the package would do little to boost growth.

"A major factor in the weak economy is the squeeze on corporate profits but especially consumer real incomes from externally generated inflation," he said. "Yesterday's inflation data underscored this as the national CPI rose to a 12-monthly rate of 2.3 per cent in July, a decade high."

However, Japanese equities shrugged off the data and put in their best performance for three weeks. The Nikkei 225 Average rose 3.2 per cent over the week, but was still down 2.3 per cent over August as a whole, its third successive monthly decline.

European stocks also moved higher over the week as financials returned to favour. The FTSE Eurofirst 300 index gained 1.6 per cent and 1.2 per cent over the month - only its second monthly gain this year.

Wall Street lagged behind somewhat. The S&P 500 closed 0.7 per cent lower over the week but up 1.5 per cent over the month.

On the currency markets, the dollar touched a six-month high against the euro at the start of the week but subsequently drifted back as investors booked profits.

Analysts said the big question now was whether the US currency could extend the rally that began six weeks ago.

"Despite huge investor scepticism surrounding the dollar's rally, we think it was supported by clear fundamental factors, was reasonable in magnitude and has more room to run," said Jim McCormick, head of currency strategy at Lehman Brothers.

"That being said, the short-term factors that triggered it argue for a pause," Mr McCormick said.

European government bonds see-sawed as investors weighed the chances of a cut in eurozone interest rates.

The yield on the rate-sensitive two-year Schatz bond settled 2 basis points lower at 4.12 per cent while the 10-year Bund yield fell 5bp to 4.17 per cent - although those moves masked sharp swings through the week.

At one point, the gap between the yield on the two maturities narrowed to the lowest for six weeks after Axel Weber, the president of the Bundesbank, said talk of eurozone interest rate cuts was "premature".

In the US, the 10-year Treasury yield was up 3bp at 3.81 per cent and the two-year was 1 basis point higher at 2.37 per cent.

Oil provided the main impetus in commodities as worries about the potential impact of tropical storm Gustav on oil installations in the Gulf of Mexico lifted crude prices.

The price of October US light sweet crude rose 0.7 per cent over the week to \$115.46 a barrel - having briefly topped \$120. Gold rose 1.5 per cent.

Stock C: House prices expected to stand firm in year ahead. The property market may have slowed but few predict a crash, writes Scheherazade Daneshkhu

Source: Financial Times (London, England)

Date of Publication: December 31, 2005 Saturday

House prices are unlikely to fall sharply next year, but will again fail to match growth in average earnings, according to the most prominent property market forecasters.

The two lenders that produce house price indices - Halifax and Nationwide - expect growth of no more than 3 per cent next year; the consensus among independent economists is that earnings will grow by 4 to 4.5 per cent.

The rise in house prices has slowed sharply this year, falling behind the average growth in earnings for the first time in 10 years. On Nationwide's measure, the average house price rose 12.7 per cent in 2004, and just 3 per cent in 2005.

The question now is whether this is the much-predicted "soft landing", or is there still a risk of housing market crash?

Although most economists agree that the housing market is overvalued, they have disagreed over the past few years about how the problem will resolve itself.

The mainstream prediction has been that runaway house price inflation will gradually slow to zero, or very close to it, and that the market will spend the next few years moving sideways until earnings catch up with prices.

Others, however, argued that the housing market could not escape its boom-bust tradition and that prices would crash, perhaps by as much as 20 per cent.

The prophets of doom in the housing market may have had some good arguments on their side: house prices look very stretched relative to earnings, and history suggests housing is an inherently volatile market. But as 2005 closes the pessimists are again being left to ponder the dictum attributed to John Maynard Keynes: "The market can stay irrational longer than you can stay solvent."

Today there are fewer people willing to predict again that prices will fall.

Forecasting the housing market is notoriously difficult, based as it is as much on sentiment as on economic "fundamentals" such as low inflation and high employment.

Mervyn King, Bank of England governor, said in June 2004: "You'd have to be either mad or a publicity-seeker to predict what is going to happen to house prices."

Only five months later, he went on apparently to ignore his own advice, predicting that "house prices may fall modestly for a period". He turned out to be wrong, at least on a national level, and the Bank now expects "stability" in the market.

Capital Economics, a consultancy which for three years stood by its forecast made in 2002 that house prices would fall by 20 per cent from 2004-06, finally gave up last week.

"There would appear to be a growing chance that the adjustment to lower valuations will come about largely via a period of broad nominal price stagnation," the consultancy wrote in a note, explaining it now expects house prices to fall by 5 per cent over the next two years, starting with a 2 per cent fall next year, followed by two years of stagnation.

The resilience of the housing market has been a surprise to property bears. But even those with a vested interest in the market have frequently turned out to be over-cautious.

Mortgage lenders have consistently underestimated the growth in house prices, most spectacularly in 2001. Most expected a sharp slowdown in house price inflation from its 12 per cent rate that year, but in the event it soared to 25 per cent in 2002, its highest level in 14 years. Peter Spencer, of the Ernst & Young Item Club forecasting group, said: "What you need to collapse even an overvalued market is a big shock like unemployment or double digit interest rate rises."

Given the independence of the Bank, which is mandated to keep consumer price inflation at 2 per cent, he believes such interest rate shocks are unlikely.

However, economists at ABN Amro think there is a significant risk of a crash, even though its central case is that prices will fall only modestly next year and remain stagnant over the next five. ABN Amro's James Carrick does not welcome the current signs of housing market recovery, arguing that they result from the creation of moral hazard by the Bank. "The Bank threatened last year to raise interest rates to more than 4.75 per cent because of the housing market, but once the market slowed, it lost its nerve and cut rates this year. This is encouraging households to take on more debt and therefore, more risk."

Mr Carrick believes high household debt has made the economy vulnerable to a shock, such as a sharp fall in the dollar. The knock-on effect in the UK would be higher unemployment, leaving many people unable to service their debts.

Conventional wisdom has it that the time to sell is when everyone is buying; another signal, perhaps, is when the last pessimists turn optimistic. Just because the market has defied expectations for so long, however, does not necessarily mean that the danger is now past.

Stock C: UK housing market

Source: Financial Times (London, England)

Date of Publication: December 31, 2005 Saturday

Crisis, what crisis? Fears of a collapse in the UK housing market in 2005 now seem overdone. Nevertheless, there seems little prospect of a return to the runaway prices that made the housing market a boring staple of the last decade's dinner parties.

Annual house price inflation is running at the lowest rate since June 1996, according to the Financial Times's own index. Prices have been broadly stable for the past three months and are now rising more slowly than the rate of inflation and well below the rate of average earnings growth. Instead of a crash, the market seems to have stabilised close to February's high level.

The bulls continue to take comfort from the fact that some measures of affordability remain below their long-run averages. Mortgage interest payments, for example, are still only 8.9 per cent of household disposable income, compared with a long-run average of 9.2 per cent. As house prices have stabilized, their ratio to average earnings has finally begun to fall. Nevertheless, house prices will have to remain stable for years if the ratio is to come down to levels that were considered normal in the past. The Royal Institute for Chartered Surveyors estimates that house prices in the third quarter were 7.8 times earnings, compared with an average of 4.9 times since 1969.

This, as well as record household indebtedness, may explain why improving levels of mortgage activity and transactions during the second half of the year have not translated into higher house prices. This stagnation alongside a recovery in transactions will please the Bank of England and the Treasury. But for ordinary mortals, the days of rampant house prices inflating away their massive mortgages are over.

Stock D: Growth in eurozone 'set to lag behind US'

Source: Financial Times (London, England)

Date of Publication: April 18, 2002 Thursday

Growth in the eurozone will continue to lag behind the US this year and the European Central Bank will have no need to raise interest rates soon, the Organisation for Economic Co-operation and Development has said.

In its latest twice-yearly Economic Outlook, the OECD, the Paris-based group of industrialised countries, predicted growth in its member countries of 1.8 per cent this year, up from 1 per cent last year.

The upward revision - almost doubling the OECD's previous forecast, made late last year - is in line with the general trend, as reflected in the latest forecasts from the International Monetary Fund.

The pattern of growth is expected to be uneven, however, with the US displaying a much stronger recovery than the eurozone or Japan.

The OECD expects the US to grow by 2.5 per cent this year, while the eurozone grows by 1.4 per cent and the Japanese economy contracts by 0.7 per cent.

In part, the inferior performance of the eurozone is explained by a worse long-term growth rate of potential output, which the OECD estimates at around 2.25 per cent, compared with about 3.5 per cent for the US. But the OECD also expects a slower cyclical upturn in the eurozone, with unemployment not starting to fall until late in the year.

Futures market rates suggest the ECB is likely to raise its main interest rate within the next six months, but the OECD suggested that those expectations may be premature.

Ignazio Visco, the OECD's chief economist, said: "There is enough slack in the eurozone labour market that in the medium term the inflation rate will be below 2 per cent. If this is so, there is no reason to raise interest rates now."

Mr Visco said there were risks to the global recovery, including concerns over equity prices and corporate earnings, the high levels of household debt in many countries, and the huge and growing current account deficit.

But he played down the possible impact of the most immediate threat: a rise in oil prices. The OECD's model suggests that if oil prices average Dollars 35 a barrel over the next 18 months, rather than its central assumption of Dollars 25, growth in the US will be just 0.2 percentage points lower.

The OECD's assessment of the economic effects of the September 11 attacks was that they were "not negligible, but not large", Mr Visco said. Developing economies seemed to have been the most affected.

The United Nations also yesterday revised upward its predictions for world growth, estimating that global gross domestic product would grow by 1.8 per cent in 2002 and 3.2 per cent in 2003, up from 1.4 per cent in 2001.

It forecast developing countries' growth rates at 3.5 in 2002 and 4.9 per cent 2003, compared with 2.4 per cent in 2001.

"Developing economies are not likely to benefit from the US-led recovery until the second half of 2002, hampering efforts to reduce world poverty," UN economists said.

Goldman Sachs launches 'more timely' indicator

Goldman Sachs has launched a new indicator for the world economy - the global leading indicator - designed to be more timely than the OECD's version, Philip Coggan reports from London. The OECD indicator appears five to six weeks after the end of the month to which it refers - rather slow for the liking of financial markets. The Goldman indicator will be available early in the following month, so that figures for November will be released in early December.

The Goldman indicator also excludes any equity index component, so that the indicator contains information independent of the market. Otherwise, an equity market rally based on the hope of economic recovery can appear to signal that the recovery is, in fact, occurring.

The Goldman indicator, which contains components such as global cargo traffic, Taiwanese exports and US unemployment claims, suggests a global economic recovery is under way and that there is no sign of a "double dip" as some commentators have feared.

Stock E: Equities rebound as Asia data signal growth

Source: Financial Times (London, England)

Date of Publication: June 12, 2010 Friday

Global equities rebounded this week but a lacklustre US retail sales report yesterday highlighted the fragility of risk appetite among investors.

After a torrid start to the week, where risk assets and the euro were hit hard, strong data out of Asia subsequently cooled fears that the eurozone debt crisis and planned austerity measures would damp global growth. Yesterday, however, a 1.2 per cent slide in May retail sales rather than a forecast 0.2 per cent rise focused the attention of investors back on the outlook of the US economy, with the data likely to pull estimates of second-quarter growth below 3 per cent.

"This data then certainly fits with a sub-par recovery with tentative evidence of some lost momentum into the spring," said Alan Ruskin, strategist at RBS Securities. "Luckily, the data is coming on a day that started well for risk or this number could have done serious damage."

In figures released earlier yesterday, UK industrial production fell 0.4 per cent instead of rising 0.4 per cent, the first decline in three months. In contrast, India reported industrial production rising 17.6 per cent year-on-year in April, up from 13.9 per cent in March.

That came after China's exports in May rose 48.5 per cent year-on-year while other data this week showed hefty bank lending and high money supply growth, presenting a worrying inflation picture for some investors.

"Beijing would, if possible, like to delay tightening policy further until it gets a clearer read of the property market and the fallout from Euro-area weakness," said analysts at RBC Capital Markets. "But such a strategy is risky given the potential for further gains in inflation in the near-term and for increased trade tensions in the lead-up to US mid-term elections in November."

Earlier this week, Ben Bernanke, chairman of the Federal Reserve, told Congress that, while the US economy should grow, "significant restraints on the pace of the recovery remain".

On Thursday, the four-week average of US unemployment claims rose 2,500 to 463,000, underlining the jobless nature of the economic recovery.

"Although the European sovereign debt crisis and environmental-turned-economic crisis in the Gulf have yet to derail the recovery, the [damping] effect on markets suggests that the economy can't deal with a third shock in the period immediately ahead," said Steve Ricchiuto, chief economist at Mizuho Securities.

In a series of central bank meetings this week, there were little surprises.

Brazil raised rates 75 basis points to 10.25 per cent and New Zealand pushed its benchmark rate up to 2.75 per cent, having kept it at a record low of 2.50 per cent for the past year.

Meanwhile, the Bank of Korea, the Bank of England and European Central Bank left rates unchanged at record low levels. Amid concerns about the eurozone, Fitch Ratings said the fiscal challenge facing the UK was "formidable".

Against such a backdrop, equities endured a choppy time but ultimately rose this week.

The FTSE All World index was 1.8 per cent higher on the week. The S&P 500 rebounded from early weakness and gained 2.5 per cent over the week. The FTSE Eurofirst 300 rallied yesterday for a weekly gain of 2 per cent.

In Asia, a strong rally yesterday was unable to stop Japan's Nikkei 225 Average closing the week 2 per cent lower.

Shanghai edged up 0.6 per cent while South Korea gained 0.7 per cent on the week. India dipped 0.3 per cent for the week in spite of rallying 0.8 per cent yesterday.

In government bonds, Italy was a stand-out amid good demand for debt sales. Its yield on 10-year paper fell to 4 per cent from 4.32 per cent on Monday.

The German 10-year Bund yield plumbed a low of 2.50 per cent on Tuesday at the height of worries about the eurozone and the debt position of Hungary - which experienced a failed 12-month auction on Thursday - before closing out the week 2 basis points lower at 2.56 per cent.

In the US, long-term debt sales attracted solid demand and, after rallying yesterday, the yield on 10-year notes was up 3bp on the week at 3.23 per cent.

The dollar slipped while the euro rebounded from a four-year low on Tuesday in volatile currency trading.

As a harbinger of risk, commodity currencies such as the Australian dollar rose about 3 per cent against the dollar and yen.

Copper and oil were key barometers of risk appetite in commodities. Copper rebounded from an eight-month low while US crude oil briefly rose above \$76 barrel on Thursday from a low of \$69.51 on Monday. Gold hit an all-time high of \$1,252 on Tuesday, only to ease back to \$1,225 yesterday. For the week, the CRB index rose 2.8 per cent.

Stock F: Investors put on the defensive

Source: Financial Times (London, England)

Date of Publication: November 29, 2006 Wednesday

US stocks remained on the defensive at mid-afternoon as investors digested weak economic data, a further rise in oil prices and remarks by Federal Reserve chairman, Ben Bernanke.

In his first public comments upon the economy since July, Mr Bernanke said activity was moderating, but core inflation was still "uncomfortably high."

His remarks kept stocks under modest pressure, but off their earlier lows.

The S&P 500 was up 1.05 points, or 0.1 per cent, at 1,382.95 after reaching a low of 1,378.03.

The Nasdaq Composite was 5.35 points, or 0.2 per cent, lower at 2,400.57, above an earlier decline to 2,390.10.

The Dow Jones Industrial Average was 11.86 points, or 0.1 per cent, lower at 12,109.85. The Dow Transportation Average was 1 per cent lower, while the Dow Utilities Average was 0.6 per cent firmer.

The better tone in energy prices boosted the American Stock Exchange Oil index, which rose 1.3 per cent.

The Philadelphia semiconductor index was off its low point but still down 0.8 per cent.

Declines in share prices during the previous two sessions had not been wholly unexpected by the market participants after their substantial rally since July.

Still, analysts cautioned stocks faced a crucial period of data, led by the November jobs report on Friday, before determining a clear direction in sentiment.

"The next one to two weeks will be important, to gauge the trajectory of the US economic data and to see whether the currency markets have undergone a mini 'wash-out' or something more serious," said David Shairp, global strategist at JPMorgan Asset Management.

Boeing, aircraft manufacturer, won a Dollars 5.7bn order for 85 planes. That follows a Dollars 5.5bn order last week and the company's shares were 0.2 per cent higher at Dollars 87.54, down from a high point of Dollars 88.74 and off last week's all-time high point of Dollars 92.05.

Palm shares were 8.5 per cent lower at Dollars 14.07, after the maker of handheld devices said a delay in shipping its new Treo 750 smartphone would affect second quarter profit and revenue forecasts. Merrill Lynch downgraded the stock from "buy" to "neutral".

Among semiconductor stocks, Broadcom remained under pressure after gains last week, and was trading off 3.8 per cent at Dollars 33.13.

Apple was 1.4 per cent higher at Dollars 90.77 amid anecdotal reports sales of its iPod music player were strong heading into the holiday season. Microsoft shares were down 0.6 per cent at Dollars 29.30 as reports said sales of its new music player, Zune, were not eroding the iPod's domination.

Oil stocks were higher, with Exxon-Mobil up 1.4 per cent at Dollars 73.51 and Chevron 1.5 per cent firmer at Dollars 69.79.

Stock F: Shares Rally for Second Straight Session

Source: The New York Times

Date of Publication: November 30, 2006

Wall Street rallied for a second consecutive session yesterday after the government's latest gross domestic product reading showed the economy was in better shape than expected, easing concerns that growth was slowing too sharply.

Major stock indexes held on to gains throughout the session even as oil prices moved to their highest levels in two months.

Providing ballast was the Commerce Department's report that G.D.P. expanded at a 2.2 percent annual rate, topping its previous estimate of 1.6 percent and economists' projections for a 1.8 percent gain. Meanwhile, the Federal Reserve said in its beige book report on economic conditions that growth was moderate in most areas of the United States in the first few weeks of November as consumer spending grew.

The reports offset a Commerce Department report released yesterday that showed new-home sales in October suffered their largest drop since July.

Wall Street appears to be in a consolidation phase after its big rally over the last two months. The fact that it rebounded rather than extended Monday's plunge, when the Dow fell 158 points, indicates that many investors want to keep buying although they are watching closely for any signs of economic trouble.

"Soft landings, when we've had them, are great for stocks," said Ed Keon, chief investment strategist with Prudential Equity Group.

The Dow rose 90.28 points, or 0.74 percent, to 12,226.73. On Tuesday, the Dow rose 14.74 points. Broader stock indicators also advanced. The Standard & Poor's 500-stock index was up 12.76, or 0.92 percent, at 1,399.48, and the Nasdaq composite index added 19.62, or 0.81 percent, to 2,432.23.

Another beneficiary of the healthy economic snapshot was the dollar, which rebounded from a 20-month low against the euro but was mixed against other major currencies.

Leading stocks higher were energy companies, which advanced after weekly supply data showed United States inventories fell more than expected. This pushed a barrel of light sweet crude up \$1.47, to \$62.46, on the New York Mercantile Exchange.

Exxon Mobil rose \$1.87, or 2.5 percent, to \$76.03. Transport stocks fell, however, on the potential for higher fuel costs. The trucking company Ryder Systems fell \$1.16, or 2.2 percent, to \$52.73.

The jewelry retailer Tiffany & Company helped lead the S. & P. 500 after it reported third-quarter profit grew a stronger-than-expected 23 percent. The luxury goods retailer also raised fiscal 2006 guidance. Shares of the company surged \$2.29, or 6.4 percent, to \$38.22.

Pfizer, the world's largest drug maker, rose 2 cents to \$27.07 after it announced plans to cut 20 percent of its United States sales force.

Ford Motor rose 2 cents to \$8.17 after the company said about 38,000 of its hourly production workers had accepted buyouts or early retirement as part of its restructuring.

Apple Computer fell by a penny, to \$91.80, as investors took profits after news of strong Thanksgiving weekend sales sent the stock to a new high of \$93.16 on Monday.

The Russell 2000 index of smaller companies was up 9.34, or 1.21 percent, at 784.16.

Advancing issues outnumbered decliners by almost 3 to 1 on the New York Stock Exchange.

Bonds declined, and the yield on the benchmark 10-year Treasury note, which moves in the opposite direction of the price, rose to 4.52 percent, from 4.50 percent. Signs of economic strength keep pressure on policy makers to continue lifting interest rates.

Stock G: Tokyo at two-month high on weaker yen

Source: Financial Times (London, England)

Date of Publication: May 30, 2003 Friday

The continued weakening of the yen boosted Japanese exporters and helped Tokyo shares hit a two-month high after a second consecutive day in higher territory.

The Nikkei 225 Average rose 1.7 per cent to 8,375.36, having gained more than 1 per cent in the previous session. The broader-based Topix index gained 1.4 per cent to 834.12.

The yen slipped in Tokyo trade yesterday as the dollar rose to Y118.9 from Y117.2, having started the week at Y116.8. Dealers said the weakness probably reflected the effects of Bank of Japan dollar buying aimed at halting the yen's rise.

Companies that earn a significant part of their revenues in overseas markets were buoyed by the prospect of more competitive pricing and currency conversion gains.

Toshiba leapt 6.4 per cent to Y350 and Matsushita rose 4.7 per cent to Y1,080.

Sony shares rose 3.3 per cent to Y3,100 the day after the company said it would launch an integrated audio-video machine, the PSX, and a new personal digital assistant this year. It will also spend Y300bn on refocusing its electronics business on areas of strategic importance such as semiconductors.

The announcement helped investors banish the memory of Sony's April results, when the company said it made a loss in the three months to March and fell well short of analysts' full-year earnings forecasts.

Konami, the videogame maker, rose 7.6 per cent to Y1,910 on hopes Sony's new game machine could spur demand for its software.

Namco, another gamemaker, gained 2.7 per cent to Y1,700 after JP Morgan raised its rating on the company. The change followed Namco's announcement on Wednesday that it would raise its dividend for the year to March to Y10 from Y5.

Meanwhile, investors shrugged off data that shows industrial output fell 1.2 per cent in April, the first drop in two months, which reinforces the impression that the Japanese economy is heading from negligible growth back to recession.

Fanuc, the machinery maker, defied the downward trend in production, saying late on Wednesday its production of industrial robots in the current quarter would be higher than that in the three months to March. The company's shares rose 5.4 per cent to Y5,300.

Sanyo shares were down 2.1 per cent at Y231, failing to respond to local media reports the company would start supplying mobile phones to Haier, one of China's largest electronics makers. The two companies already have an alliance that sells car navigation systems.

Taipei firmed as foreign investors bought semiconductor stocks amid hopes of an improvement in the sector. The weighted index rose 1.5 per cent to 4,543.04, taking its advance over the past week to 6 per cent.

Taiwan Semiconductor Manufacturing, the world's biggest contract chipmaker, climbed 3 per cent to TDollars 52, while rival United Microelectronics firmed 2 per cent to TDollars 20.90. Between them, the two stocks account for some 12 per cent of the market's total capitalisation.

Steel stocks moved ahead on hopes of additional public works contracts. China Steel rose 1 per cent to TDollars 20.40.

Kuala Lumpur rose to an eight-month high as it played catch-up with other markets in the region. The composite index firmed 1.2 per cent to 672.05, although volume edged back to 329m shares.

Among blue chips, Maybank rose 3.6 per cent to MDollars 8.60, power utility Tenaga added 2.3 per cent to MDollars 9 and Telekom edged up 2.6 per cent to MDollars 7.85. The three stocks accounted for 60 per cent of the main index's advance.

Manila was lifted by bargain hunting as investors took the view that the market remained undervalued at current levels. Encouraging economic growth figures helped underpin sentiment.

The composite index rose 1.8 per cent to 1,066.47, its highest close for two weeks.

Gross domestic product expanded at an annual rate of 4.5 per cent in the first quarter of the year, reassuring investors that the government's full-year target of between 4.2 and 5.2 per cent growth remained achievable.

Philippine Long Distance Telephone climbed 2.4 per cent to 432.5 pesos and Globe Telecom firmed 3.5 per cent to 590 pesos.

Stock G: Yen's strength is not justified, says Koizumi

Source: Financial Times (London, England)

Date of Publication: May 30, 2003 Friday

Junichiro Koizumi yesterday said the yen was too strong in relation to Japan's economic fundamentals, suggesting the prime minister is nervous that a weak dollar could undermine his country's fragile recovery.

His comments suggest he is willing to use his verbal influence to support his government's campaign to ease the yen downwards.

"Given the current state of the economy, Japan's currency should be weaker," the prime minister said, referring to recent figures showing that gross domestic product growth fell to almost zero in the first quarter.

"Credit rating agencies have downgraded Japanese government bonds to below those of Botswana. Yet why doesn't the Japanese yen depreciate?"

Mr Koizumi's remarks came as the yen, which has risen strongly towards Y115 to the dollar in recent months, provided Japan's government with some relief by falling back to a one-month low of Y119.5.

Last month, the Japanese government revealed that it had secretly sold yen to the tune of Dollars 20bn (Pounds 12.4bn) in the first three months of the year, in an effort to prevent the currency from strengthening too fast.

Today, the Bank of Japan will publish figures which are expected to show that the government has ordered further intervention since then.

Mr Koizumi was talking to European journalists, including Les Echos, the FT's French sister publication, as he set off for the 300th anniversary celebrations in St Petersburg on his way to the Evian summit of G8 industrial nations this weekend. His remarks suggest he will seek to persuade fellow G8 leaders that Japan cannot fulfil demands for a strong recovery of its economy if it is not given some room for manoeuvre on the currency.

Yu Kameoka, the prime minister's spokesman, denied that Mr Koizumi was seeking to guide the yen lower. "He was just commenting on the facts. He has not made any indication of a policy change."

However, Mr Koizumi insisted Japan's currency was too strong, particularly as the country was going through what the prime minister calls structural reforms.

"When the US and the UK were working on their reforms, the dollar and the pound depreciated," he said. "Yet compared with 30 years ago, the yen has appreciated by a factor of three against the dollar and by five times against the pound."

On his government's decision to inject Dollars 17bn into Resona, Japan's fifth biggest bank, Mr Koizumi said he hoped it would prompt other banks to get their balance sheets in order.

He denied that the Resona bailout was a nationalisation and said there was no need to take such action towards other institutions at the moment.

The Japanese prime minister is expected to meet China's President Hu Jintao in St Petersburg, their first talks since Mr Hu took office in March. Beijing cancelled Mr Koizumi's planned trip to China last year in protest at his repeated visits to what it considers the nationalistic Yasukuni war memorial.

Stock H: Microsoft warns growth is slowing

Source: Financial Times (London, England)

Date of Publication: April 23, 1998, Thursday

Microsoft attempted yesterday to temper expectations for its sales growth over the next few quarters, despite reporting slightly higher than expected earnings for its third fiscal quarter after the close of New York trading.

In what is becoming a quarterly ritual for the world's largest software company, officials warned analysts that the company's growth was slowing. Revenue growth for the third quarter, ended March 31, was at the lowest level since 1996, said Greg Maffei, chief financial officer.

Microsoft said revenues for the latest quarter were \$ 3.77bn, an 18 per cent increase over \$ 3.21bn in the same quarter last year. Net income for the third quarter was \$ 1.33bn, up 28 per cent from \$ 1.04bn. Earnings per share rose to 50 cents, up 25 per cent from 40 cents a share in the same period last year.

"We are gratified that the quarter's results confirm that consumer demand remains strong for Microsoft's products," said Mr Maffei. "But it is critical to note that our growth has slowed for each of the last four quarters, and we are likely to experience slower growth for the balance of calendar 1998."

Revenues in the fourth quarter were expected to be flat with those of the third quarter, said Mr Maffei. Earnings per share were expected to be "down a few pennies". He also expressed caution about the first half of fiscal 1999.

He cited weakness in Asian markets as one factor slowing Microsoft's growth. However, there was evidence that some markets were not getting weaker, added Steve Ballmer, executive vice-president.

With few new programs due to be launched until the second half of 1999, growth rates would come under pressure, the executives added.

The popularity of "sub-\$ 1,000" PCs, which represented 50 per cent of all consumer PCs sold in the last quarter, could also have a negative effect, Microsoft said. Fewer application programs are typically delivered on these low-cost machines.

Issues surrounding the "year 2000 problem" might also put a drag on Microsoft's sales as companies spent larger portions of their budgets on fixing problems rather than purchasing new products, he said.

Microsoft reiterated its plans to launch Windows 98, the next version of its PC operating system, in June.

For the fiscal year to date, Microsoft's revenues were \$ 10.49bn, up from \$ 8.18bn in the first nine months of fiscal 1997. Net income for the year to date was \$ 3.13bn, or \$ 1.17 a share, compared with \$ 2.39bn, or 92 cents a share.

Stock H: Microsoft Beats Earnings Expectations, but Revenue Growth Slows

Source: The New York Times

Date of Publication: April 23, 1998

After alerting analysts last month that its third-quarter earnings would exceed Wall Street's expectations, the Microsoft Corporation reported results yesterday that surpassed their revised estimates.

But the company's revenue growth slowed to its lowest level since 1996, and Microsoft executives warned that sales would be sequentially flat in the next few quarters.

Microsoft's strong performance was all the more impressive for coming in a quarter when both the Intel Corporation and the Compaq Computer Corporation had disappointing results. Microsoft was not immune to the excess inventory problems that affected Intel and the personal computer manufacturers: sales growth of operating system software to so-called original equipment manufacturers did slow. But the strength of its other core businesses, and tight internal cost controls, enabled earnings growth to outpace revenue growth.

Shares of Microsoft surged yesterday in anticipation of the results, which were released after the close of regular Nasdaq trading. The stock rose \$3.75, to \$98.75, but slipped to \$98.125 in after-hours trading.

As has become their custom, Microsoft executives used the quarterly conference call with securities analysts to try to lower expectations, gloomily describing a number of threats, including PC's costing less than \$1,000, the Asian economic crisis and the year 2000 problem. As has become custom, analysts discount these warnings.

"This is just an incredible franchise," said David Readerman, an analyst with Nationsbank Montgomery Securities. "In the face of decelerating revenue growth, they're able to grow margins."

To be sure, some people argue that Microsoft has too powerful a franchise, and the company faces investigations of its business practices by the Department of Justice and the attorneys general of several states. On Tuesday, a Federal appeals court heard Microsoft's appeal in the Justice Department's suit accusing the company of violating a 1995 consent decree by forcing computer makers to accept its Internet Explorer browsing software as a condition of licensing its Windows 95 operating system.

For the quarter ended March 31, Microsoft earned \$1.34 billion, or 50 cents a share fully diluted, up 28 percent from \$1.04 billion, or 40 cents a share, in the quarter a year earlier. Sales rose 18 percent, to \$3.77 billion from \$3.21 billion.

That sales growth is the slowest in five quarters, down from 34 percent in the immediately previous quarter. Greg Maffei, Microsoft's chief financial officer, said in a telephone interview that the company was feeling both the slowing of personal computer sales that affected other companies, as well as the aging of many products, like Windows 95 and Office 97.

"We're sort of at the mature point of our product cycle in a lot of core products," Mr. Maffei said. "Asia, market saturation, a maturing product cycle and the law of large numbers -- all of these have impacted our ability to grow the top line. Until we see some of these new products out, we won't see an acceleration of growth."

Microsoft plans to begin shipping the new version of its operating system, Windows 98, to PC makers on May 15 with the official introduction scheduled for June 25. SQL Server 7, the latest update of its data base management software, is scheduled to ship in September. Other products are farther off, with Windows NT 5.0, its more powerful operating system, still at least nine months off, and the next version of Office, presumably Office 99, not scheduled yet.

But Mr. Maffei said Windows 98 would have little impact on the fourth fiscal quarter, and might not make a significant impact on the first quarter of the 1999 fiscal year. As it has in recent years, Microsoft deferred recognition of a substantial amount of revenue in the quarter, \$425 million, and will do so as well with Windows 98 sales, he said. This deferred revenue recognition is a more realistic accounting of software sales cycles, he said.

Rick Sherlund, an analyst with Goldman, Sachs & Company, said he did not expect Microsoft's revenue growth rate to reach the low 20 percent range again until the quarter ending in June 1999, after Office 99 and Windows NT 5.0 enter the market.

"I think Microsoft is at a flat point in its growth cycle right now," he said. "Windows 98 will help some, but I don't know if it's enough to accelerate revenue growth."

Stock I: House price rises show signs of slowing

Source: Financial Times (London, England)

Date of Publication: February 10, 2003 Monday

House prices increased by 22 per cent in England and Wales last year but there were signs of the rise slowing in the final quarter as London prices fell, according to official figures published today by the Land Registry.

The average cost of a home rose to Pounds 145,251, a 22 per cent increase, but this was lower than the 25 per cent reported by Nationwide and Halifax's 26 per cent over the same period.

The east Midlands and south-west had the fastest growth with prices rising by 28 per cent or more while greater London prices grew the slowest at a still rapid 18.8 per cent.

However, London was the only region to suffer price falls in the final quarter compared with the third quarter. The average home in the capital dropped in value from Pounds 248,609 to end the year at Pounds 241,838.

Other surveys have also reported price falls in London, leading to speculation that the market may have peaked.

Knight Frank, the estate agent, said prices for prime London property had fallen by 1.4 per cent in the second half of last year, having risen by 6.2 per cent in the first half. This took the total rise for the year to 4.7 per cent, down from 12.6 per cent in the previous year.

Prices in Kensington and Chelsea fell by 12 per cent in the final quarter of 2002 compared with the previous quarter, according to the Land Registry. Prices were down by 5 per cent in Greenwich, 4 per cent in Camden and 3 per cent in Hammersmith and Fulham. But prices rose in most London boroughs over the same period.

Of the 630 homes worth at least Pounds 1m sold in the final quarter, 390 were in greater London. This was up on the 488 sold in the final quarter of 2001 but down on the 983 sold in the third quarter of 2002.

The price of the average home fell in the final quarter to Pounds 145,251 from the third quarter's Pounds 146,150, but this reflected the traditional end-of-year slowdown in the housing market.

Unlike the mortgage lenders, the Land Registry does not adjust its figures for seasonal factors or the mix of types of properties sold.

Halifax said last week the housing market was beginning to slow, but expected prices to continue rising this year, though at the slower rate of 9 per cent.

However, the Bank of England's surprise cut in interest rates to 3.75 per cent, the lowest for almost half a century, could reinject momentum into the market.

Land Registry figures are regarded as the most authoritative as they include all house sales, unlike figures published by lenders, which are restricted to homes requiring a loan and are based on mortgage commitments rather than actual sales.

Stock J: Ranks of unemployed likely to swell further

Source: Financial Times (London, England)

Date of Publication: August 31, 2009

Measurements of employment and industrial and consumer activity in leading economies will dominate this week's data.

Non-farm payrolls, the headline US employment indicator, is released on Friday. Analysts expect an improvement on July's loss of 247,000 jobs, with the consensus opinion being for just 222,000 jobs to have been shed during August. Such an improvement would be the smallest loss of jobs since September 2008, but nevertheless would push the US unemployment rate up to 9.5 per cent from the 9.4 seen in July.

Eurozone unemployment figures are released tomorrow, and analysts predict a continuation of the rising trend. July's figure is expected to increase to 9.5 per cent from the 9.4 seen in June.

The seasonally adjusted measure of Germany's unemployment, which is also published tomorrow, has been flat-lining since April at 8.3 per cent. The consensus forecast is for a slight worsening of this figure to 8.4 per cent.

Industrial performance as measured by purchasing managers indices has been steadily improving this year (see chart). US ISM manufacturing, released tomorrow, is expected for the first time since January 2008 to show an expansion of the sector. Consensus opinion predicts an August figure of 50.2, which would be significant because it breaches the 50 level that indicates growth in the sector.

Better news, too, is expected from the UK manufacturing PMI, which is also published tomorrow. The return to growth seen during July is expected to continue, with the August figure expected to hit 51.3, up from 50.8.

Actual figures for Japan's industrial production during July are released today. This sector, one of the worst hit by the global recession, is expected to have grown slightly from June, up about 1 per cent. Little comfort can be taken from this figure though, because output remains down by more than 20 per cent compared with the same period last year.

The pulse of the service sector can be taken on Thursday when its PMI's are released.

US ISM non-manufacturing, which measures the US service sector, has been contracting since September 2008, but there has been a slowing in the rate during the past five months. Analysts expect an August figure of 48, up from July's 46.4, but still shy of the crucial 50 level that indicates growth.

Other positive signs in the US consumer sector can be found in the housing market. Last week saw house prices in June, as measured by the S&P Case-Shiller 10 city composite, register their second successive monthly increase. Tomorrow's release of US pending home sales in July is expected to bring positive news, with an increase of 1 per cent on the June figure.

Meanwhile, the PMI for UK services, which has been growing since May, is expected to continue the trend in August. The consensus prediction is for a slight improvement from July's 53.2 to 53.9.

Stock K: Traders unconvinced by Fed's confidence booster

Source: Financial Times (London, England)

Date of Publication: January 31, 2008 Thursday

A second aggressive rate cut in just over a week yesterday from the Federal Reserve failed to help Wall Street stocks, while the dollar came under pressure and gold set a record high.

The Fed cut both the Fed funds and discount rates by 50 basis points, to 3 per cent and 3.5 per cent respectively. That came after last week's inter-meeting 75bp reduction in the funds rate.

In its accompanying statement, the US central bank said that financial markets remained under considerable stress and that recent information indicated a deepening of the housing contraction as well as some softening in labour markets.

"The Fed's number one current priority is to soften this economic downturn, and appears ready to do what it takes," said Max Bublitz, chief strategist at SCM Advisors.

Wall Street initially rallied, but returned to negative territory in the last hour of trade amid renewed jitters over the financial strength of bond insurers Ambac and MBIA. The S&P 500 rose as much as 1.7 per cent after the Fed acted, only to close down 0.5 per cent at 1,355.81.

In the US Treasury market, the two-year yield reversed an early rise and was down 5bp at 2.22 per cent. Interest rate futures rallied and priced in at least a 2.5 per cent funds rate by the end of April. "In light of what this cut means for future strategy, we look for the Fed to cut another 50 basis points in March followed by 25 basis point cuts at both the April and June meetings," said Drew Matus, economist at Lehman Brothers. "This leaves us with a terminal Fed funds rate of 2 per cent."

Longer-dated Treasury yields rose further after the rate cut as traders priced in a stronger chance that the economy will rebound and inflation rises. The yield on the 10-year bond was up 4bp at 3.70 per cent. Treasury inflation breakeven rates were wider indicating a higher expectation of inflation.

The dollar weakened almost across the board, and it closed at its weakest level against the euro. The dollar index closed just above its record low set in November and has fallen more than 2 per cent since the Fed cut rates last week.

The move by the Fed yesterday followed a mixed bag of US economic releases earlier in the day.

A survey from ADP Employer Services showed that 130,000 private sector jobs were created in January, about three times the expected increase, heightening expectations that tomorrow's crucial non-farm payrolls report could turn out to be stronger than expected.

However, US fourth quarter gross domestic product growth came in much weaker than expected. The economy expanded at an annualised rate of 0.6 per cent in the fourth quarter of last year - the slowest pace for five years and down sharply from 4.9 per cent in the third quarter.

Stephen Stanley, chief US economist at RBS Greenwich Capital, warned the fourth-quarter advance was "too close for comfort" given the normal scope of revisions to the initial estimate.

"Depending on how the surprises elsewhere break, the fourth-quarter GDP number could easily end up slightly below zero."

Equity markets in Europe and Asia saw relatively quiet trading as investors the US rate news.

In Asia, an early attempt to build on Tuesday's gains came to nought as uncertainty about the Fed set in. In Tokyo, the Nikkei 225 Average ended 1 per cent lower, while Hong Kong shed 2.6 per cent and Seoul fell 3 per cent to a nine-month low.

European stocks adopted a similarly cautious tone, with fresh write downs at Swiss bank UBS further damping the mood. The FTSE Eurofirst 300 index fell 0.7 per cent.

European government bonds edged back in quiet trading ahead of the Fed's decision. with the 10-year Bund yield up 3bp at 4.01 per cent. The 10-year Japanese government bond yield fell 4 bp to 1.43 per cent following the slide in Japanese equities.

In commodities, oil prices edged higher after a choppy session as investors reacted to news of a bigger than forecast increase in US crude inventories last week.

March West Texas Intermediate rose 69 cents to Dollars 92.33 a barrel.

The price of spot gold in New York was Dollars 8.45 higher at Dollars 932.15 after reaching a record Dollars 936.95.

Stock L: Modest rally tempered by long-term concerns

Source: Financial Times (London, England)

Date of Publication: December 31, 2008 Wednesday

Global equities enjoyed a moderate end-of-year rally yesterday, but the mood was tempered by persistent concerns about the outlook for the global economy.

In Tokyo, the Nikkei 225 ended its last session of 2008 with a gain of 1.3 per cent, although its 42.1 per cent annual decline was the worst on record.

Most other Asian markets ended higher yesterday but remained on course for full-year declines of a similar magnitude.

It was the last full day of trading for many European bourses. Some will be open for shortened sessions today.

Germany's Dax ended the year 40.4 per cent lower.

The FTSE Eurofirst 300 index - which will trade today - rose 1.7 per cent.

In New York, the S&P 500 index rose 2.4 per cent as investors took heart from news that Washington had widened its bail-out for the car industry.

There were several sets of economic figures on both sides of the Atlantic for investors to digest.

Eurozone lending and money supply did little to deter expectations of further interest rate cuts by the European Central Bank to stimulate the economy.

"Lending to the private sector saw a broad-based moderation - across households, financial institutions and corporates - as the availability of credit to the eurozone economy remains strained," said Steve Malyon, strategist at Scotia Capital.

"The door thus appears to be wide open for further ECB rate cuts. The only question appears to be when the ECB leadership will capitulate to this eventuality."

That view was encouraged by preliminary figures showing that Germany's annual inflation rate slowed for a fifth successive month in December to its lowest level for two years.

On the currency markets, talk of lower eurozone rates failed to damp the appeal of the euro, which gained ground against the dollar and held near Monday's record high against sterling.

The Bank of England will unveil its latest interest rate decision next week, and the increasingly bleak outlook for the UK economy has raised expectations for a further easing, keeping the pound under pressure recently.

Yesterday the UK currency hit a six-and-a-half-year trough against the dollar and touched a record low on a trade-weighted basis.

"The trend in sterling/dollar has been extremely bearish over the past two weeks, and we would not advise fighting it," Steve Malyon, currency strategist at Scotia Capital, said.

There was further grim news on the US economy.

The Conference Board said its index of consumer confidence fell from 44.7 in November to 38.0 this month, the lowest level since records began in 1967.

"The overall economic outlook remains quite dismal for the first half of 2009," Lynn Franco, director of the Conference Board's consumer survey, said.

There was no let-up to the dire series of data on the US housing market.

The S&P/Case-Shiller home-price index of 20 cities fell by a record 18 per cent in October from a year earlier.

Dimitry Fleming, economist at ING, noted that continued misery in the housing market would mean further pressure on banks' credit portfolios.

"Further losses lead to even tighter credit standards, leading to more house price declines," he said.

"A vicious circle threatens."

There was little impact on the markets from a marginally better than forecast reading on the Chicago Purchasing Managers' index.

Government bonds were mixed as investors got to grips with the welter of economic releases.

The yield on the 10-year Treasury was 1 basis point lower at 2.08 per cent while the two-year yield dropped 5bp to 0.74 per cent.

European bonds fell back, in spite of the better news on inflation, as historically low yields deterred buyers.

The 10-year Bund yield rose 5bp to 2.95 per cent, while the two-year Schatz gained 5bp to 1.78 per cent.

In commodities, the worrying US confidence figures rekindled demand concerns, overshadowing the continued tensions in the Middle East.

The benchmark US crude price fell 99 cents to \$39.03 a barrel, having briefly risen back above \$42 on Monday.

Gold retreated from an 11-week high to trade 0.4 per cent lower at \$871.50 an ounce.

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